
DMS-100* FAMILY

ALL PRODUCT COMPUTING-MODULE LOADS

Volume 14 of 15

RETIRED BUILDING BLOCK
ENGINEERING MANUALS

97Q4

Standard 05.03

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APC (C/42) BROWN (-48V)

PEC CODE: NTZZ35NB

CPC CODE: B0240855

RATING: MD

REPLACES: NTZZ35NA

REPLACED BY: NTZZ35MB

ABBREVIATION NAME: APC

ENGINEERING DESCRIPTION: The APC(Application Processor Cabinet) provides increased processing and data management power required for running software applications such as DMS Service Control Point and Billing Server. Application Processor Shelf can house up to two Application Processor (AP) or File Processor (FP) units. The Storage Device Shelf can house up to two Storage Devices (SDs). Each SD consumes one half shelf and comprises a pair of mass storage units (disk or tape drives). SCSI cables are used to interconnect an FP to one or more SDs in a daisy chain arrangement. Shelves and interconnect cabling are provisionable, subject to certain restrictions. The APC comes provided with a Brown exterior and -48V capability. Some Carrier market APC cabinets will have an optional Fiber Link Interface Shelf (FLIS) at position 26. This shelf will operate two Ethernet Interface Units (EIU).

REFERENCE DOCUMENTATION: MS9X80CA 01 07
SLZZ35NB 00 01

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific

MARKETS:

Applicable markets:

CALA
Carrier

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NTZZ35NB EMC4-04-APC-5 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 03 10	ECM 675 04	Introduce EMS section.
94 04 29	ECM 675 05	ET46843 - Correct Cable Run Typo ECD 018-41431 NT9X95BA repl. NT9X95AA
94 06 09	ECM 675 06	Modify rules for Right filler. Correct Memory Provisioning Order.
94 07 29	ECM 675 07	Introduce the 2 GByte Disk Storage. Correct mismatches with the AD. ECD 018-43238 2 GByte Disk changes. Add FSP Terminal Block cover. Other minor changes.
94 08 31	ECM 675 08	ET 19619-Corrects provisioning of the NT9X9531 & NT9X9532 power cabling kits.
94 11 14	ECM 537 03	Add this EMB to ECM.
95 02 22	ECM 675 09	EC 018-43242 SCSI RTG Labels. EC 018-43745 Introduce NT9X91AC Power Converter into APC and A&M the NT9X91AB Power Converter.
95 05 08	ECM 675 10	EC 018-44960 FLIS at position 26.
95 05 15	ECM 675 11	Fix ET 70793 issues.
95 05 17	ECM 675 12	Correct EIU assignment.
95 08 11	ECM 675 13	ET 27929. Correct end aisle cable.
95 08 29	ECM 675 14	MD Section. Removing frame fail lights resulted in duplicate sections.
95 08 31	ECM 675 15	Add FLIS lables.
95 10 19	ECM 675 16	ET30399. Adds labels and rules for P0736058 and P0736059.

The APC (C/42) Brown (-48V) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
EQUIPMENT	PEC	ABBR	QTY	POS	POS	RULE
Application Processor Cab.	NT9X80CA		1			AP
C42 Cabinet Mechanical Assy	NT9X95BA		1			AP-XXX
Frame Supervisory Panel -48V	NT9X03AA	FSP	1	52		AP
Cooling Unit (-48V)	NT9X95CU		1			AP
Power Terminal Block Kit (streamline)	NT9X9531					RUL17
Power Terminal Block Kit (standalone)	NT9X9532					RUL17
Terminator FSP Plug	NT9X0314			52		RUL13, RUL15
Application Processor Shelf	NT9X8101			XX		RUL1
Left Fiber Assembly Panel	NT9X6506			XX		RUL1
Right Fiber Assembly Panel	NT9X6503			XX		RUL1
APC AP LEFT(C/42)	NTZZ35QA			XX	1F	RUL2
APC FP LEFT(C/42)	NTZZ35RA			XX	1F	RUL2
24Mb Memory CP	NT9X14DB			XX	11F-8F, 16F-19F	RUL3
Remote Term I/F PB	NT9X26AB			XX	13R, 14R	RUL4
APC AP RIGHT(C/42)	NTZZ35SA			XX	24F	RUL2
APC FP RIGHT(C/42)	NTZZ35TA			XX	23F	RUL2
APC Pack Fill Right	NTZZ35JA			ZZ	20F	RUL13
24Mb Memory CP	NT9X14DB			XX	23F-20F, 28F-31F	RUL3
Remote Term I/F PB	NT9X26AB			XX	25R, 26R	RUL4
Link Interface Shelf Assy	NT9X7204		1	26		RUL19
+5V Power Converter	NT9X30AA		2	26	04F, 36F	RUL21
-5V Power Converter	NT9X31AA		2	26	01F, 33F	RUL21
Power Converter CP	NTDX16AA		4	26	04F, 36F 01F, 33F	RUL22
Power Interface Unit	NT9X2825		2	26	01F-04F 33F-36F	RUL22
LIS F-Bus Controller CP	NT9X96AA		2	26	07F, 32F	RUL19
LIS Fiber INTF Paddle Board	NT9X98AA		2	26	07R, 32R	RUL19
F-Bus A Terminator PB	NTEX20AA		1	26	30R	RUL19
F-Bus B Terminator PB	NTEX20BA		1	26	8R	RUL19

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EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
PB Filler Face Plate	NT9X19BA		10	26	10R, 12R, 14R, 16R, 18R, 20R, 22R, 24R, 26R, 28R,	RUL19
Bulkhead Assembly Left	NT9X6534		2	26		RUL19
Bulkhead Assembly Right	NT9X6580		2	26		RUL19
Intra Shelf Comm. Cable Assy.	NT9X9820			26		RUL19
Enhanced CPU-IPF CP	NTEX22BB		2	26	08F, 30F	RUL23
Ethnernet Interface CP	NT9X84AA		2	26	09F, 31F	RUL23
Ethnernet I/F PB	NT9X85AA		2	26	09R, 31R	RUL23
EIU (2 Slot) ID Label	P0738387		2	26	08F, 30F	RUL23
Desig. Label NT9X85AA	P0711661		2	26	09R, 31R	RUL23
DS0A Cable Assembly	NT9X0190		2	26	09R, 31R	RUL23
Filler Face Plate	NT9X19AA			26	08F-31F	RUL20
PADBD Filler Face Plate	NT9X19BA			26	09R, 11R, 13R, 15R, 17R, 19R, 21R, 23R, 25R, 27R, 29R, 31R	RUL20
Screws & Washers	P097F813		4	26		RUL19
	P0284154		1			RUL19
	P0183220		1			RUL19
Rear Bottom Shelf ID Label	P0739095					RUL19
Rear Bot Design Strip Label	P0739095			26		RUL19
Rear Top Design Strip Label	P0739096			26		RUL19
Front Top Design Strip Label	P0800327			26		RUL19
FLIS Shelf Des. strip(REAR)	P0730475		1	26		RUL19
LIU cable routing labes	P0714420			26		RUL19
LIU cable routing labes	P0735397			26		RUL19
Bulkhead Cover Plate Assy.	NTEX5025			26		RUL19
APC Storage Device Shelf	NT9X8301			YY		RUL5
Left Fiber Assembly Panel	NT9X6506			YY		RUL5
Right Fiber Assembly Panel	NT9X6503			YY		RUL5
APC SD LEFT(C/42)	NTZZ35XA			YY	1F	RUL11
APC SD (FULL SHELF-C/42)	NTZZ35ZA			YY	1F	RUL12
600 MB Disk Storage Unit	NT9X90AA			YY	8F, 14F	RUL6
2 GB Disk Storage Unit	NT9X90AB			YY	8F, 14F	RUL6
1.3 GByte DAT Storage Unit	NT9X90BA			YY	8F, 14F	RUL6

Retired Equipment
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EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Filler Face Plate	NT9X19AA			YY	8F-13F, 14F-19F	RUL6
APC SD RIGHT	NTZZ35YA			YY	32F	RUL11
APC Pack Fill Right	NTZZ35JA			ZZ	20F	RUL13
Storage Device Pack Fill Right W PB	NTZZ35KA			YY	20F	RUL14
600 MB Disk Storage Unit	NT9X90AA			YY	20F, 26F	RUL6
2 GB Disk Storage Unit	NT9X90AB			YY	20F, 26F	RUL6
1.3 GByte DAT Storage Unit	NT9X90BA			YY	20F, 26F	RUL6
Filler Face Plate	NT9X19AA			YY	20F-25F 26F-31F	RUL6
Desig. Label(NT9X90AA)	P0729127			YY	8F, 14F	RUL6
Desig. Label(NT9X90AB)	P0724360			YY	8F, 14F	RUL6
Desig. Label(NT9X90BA)	P0729128			YY	8F, 14F	RUL6
Desig. Label(NT9X90AA & NT9X90BA)	P0730171			YY	8F, 14F	RUL6
Desig. Label(NT9X90AB & NT9X90BA)	P0724513			YY	8F, 14F	RUL6
APC Terminal Block	P0736058					RUL24
Designation Strip						
APC Cabinet Power Filter Labels	P0736059					RUL25
Filler Packfill	NT9X01FB			ZZ		RUL7
Blank Shelf	NT0X24BD			ZZ		RUL7
Frame Fail Lamp(Brown)	NT0X24BT		1			AP
Rear Frame Fail Lamp(Brown)	P0674502		1			AP
Streamline Exterior skin Assembly, Left, Brown	NTRX73AN					RUL9
Streamline Exterior skin Assembly, Right, Brown	NTRX73AP					RUL9
C42 Cabinet Mechanical Assy	NT9X95BA					NOTE10
SCSI Wiring Configuration	AR					RUL10
FSP Terminal Block (TB1)	A0368392			52		RUL18

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) Both planes of each unit are shown together in the equipment list, while the two half-shelves are shown separately.
- 2) XX, YY, and ZZ denote shelf position 00, 13, 26, or 39. XX denotes equipment that can be assigned to an Application Processor Shelf. One Application Processor Shelf is Always Provided in position 39. YY denotes equipment that can be assigned to a Storage Device Shelf. ZZ denotes equipment that can be assigned to any shelf position.
- 3) Maximum four (4) FPs are to be assigned beginning from shelf 39 (top of cabinet) moving downwards, and left to right across each shelf. Allot space for SDs from shelf 00 (bottom of cabinet) moving upwards, and left to right across each shelf. Leave no gaps in the assignment sequence.
- 4) The SCSI bus with the greatest number of devices is to be assigned first, beginning at the bottom of the cabinet, followed by the next largest bus, and so on.
- 5) Provision the Storage Devices according to the permissible configurations outlined in the ECM. SCSI cabling cannot leave the cabinet.
- 6) Within each SD space allotment, Power Converters, SCSI Device Interface Paddleboards, and SCSI cables must be equipped initially. The Storage Devices themselves can be provisioned in a future extension. Any type of SD may be

provisioned in an allotted quadrant, or a quadrant may be left unequipped. However, it is recommended to position the two members of a shadowed pair side by side within a half shelf.

- 7) It is permitted to leave shelf positions unequipped initially. In an extension, Application Processor and Storage Device Shelves can be added in the field in place of the initial Blank Shelf filler.
- 8) Disk storage devices are more sensitive to vibration than DAT storage devices. Where possible, disk drives should be located lower in the cabinet than DAT drives.
- 9) After the FPs and SDs are assigned per the above notes, APs may be assigned to AP shelves into the remaining half-shelf spaces. It is possible to fill a cabinet with APs alone, should an application require it.
- 10) Refer to NT9X95BA(EMA4-07-001) for additional mechanical hardware requirements for C42 Cabinet.

RULES:

- AP 1) When PEC NTZZ35NB is ordered, these items are provided.
- 2) The NTZZ35NB is comprised of the following:
 - NT9X9575 Cabinet Framework
- AP-XXX 1) This PEC is always provided on the NT9X80CA and is indicated here for completeness.
- 2) Refer to the NT9X95BA (EMA4-07-001) section for additional Mechanical Hardware requirements for C42 (S/DMS) Cabinet.

- RUL1 1) Provide one (1) NT9X8101 Application Processor Shelf when this shelf position is to contain Application Processors (APs) or File Processors (FPs).
- 2) Provide one (1) NT9X6506 Left Fiber Assembly Panel and one (1) NT9X6503 Right Fiber Assembly Panel for every NT9X8101 Application Processor Shelf provisioned. Shelf 39 already comes equipped with one (1) NT9X6506 and one (1) NT9X6503.

- RUL2 1) Provision the circuit pack quantities indicated to equip one half-shelf to provide a dual-plane AP or FP:

PEC	Quantity per half-shelf
-----	-----
NTDX15AB	2
NT9X86AA	2
NT9X13LA	2
NT9X21AB	2
NT9X62AA	2

- RUL3 1) Provision NT9X14DB 24 MByte Memory CP as required by the application. The application may designate one of the memory CPs as a hot spare; this is optional. Note that with the NT9X14DB, the first 4 MByte of data store is unusable.
- 2) In an Application Processor, a maximum of four (4) 24 MByte Memory CP may be equipped per plane (total eight (8) per AP) for a total of 92 MBytes of memory per plane. (96 - 4 = 92 MBytes) In a File Processor, a maximum of three (3) 24 MByte Memory CP may be equipped per plane (total six (6) per FP) for a total of 68 MBytes of memory per plane. (72 - 4 = 68 MBytes) In a FP, slots 10F-8F and 17F-19F, or 22F-20F and 29F-31F, are available for memory CP.
- 3) Assign memory CP beginning with the CP position nearest the CPU CP and work away from the CPU. For the left half-shelf the sequence is 10F and 17F, 9F and 18F, 8F and 19F. (11F and 16F are the first position if the unit is an AP). For the right half shelf the sequence is 22F and 29F, 21F and 30F, 20F and 31F. (23F and 28F are the first position if the unit is an AP).
- RUL4 1) Provision NT9X26AB if that vintage is equipped in the DMS-Core. New core installations should be provisioned with NT9X26AB.

- RUL5 1) Provide one (1) NT9X8301 Storage Device Shelf when this shelf position is to contain Storage Devices (SDs).

- 2) Provide one (1) NT9X6506 Left Fiber Assembly Panel and one (1) NT9X6503 Right Fiber Assembly Panel for every NT9X8301 Storage Device Shelf provisioned.

- RUL6
- 1) Provide one (1) NT9X90AA 600 MByte Disk Storage Device per quadrant when the application requires a hard disk drive in BCS36 and below.

Provide one (1) NT9X90AB 2 GByte Disk Storage device per quadrant when the application requires a hard disk drive in CSP-02 and higher. Existing applications utilizing the NT9X90AAs are not required to upgrade any of the storage devices. The NT9X90AB and the NT9X90AA are not supported in the shadowed set.

- 2) Provide one (1) NT9X90BA 1.3 GByte DAT Storage Device per quadrant when the application requires a Digital Audio Tape storage device. Provision DG60M Magnetic Tape Data Cartridge (blank) as required.
- 3) Provide six (6) NT9X19AA Filler Face Plates for each allocated quadrant not equipped with with an SD.
- 4) When equipping one half SD(storage device) shelf with a combination of one Disk(NT9X90AA) and one DATs(NT9X90BA) then provide one (1) P0730171 Label.
- 5) When equipping one half SD(storage device) shelf with one or two Disk(NT9X90AA) then provide one (1) P0729127 Label.
- 6) When equipping one half SD(storage device) shelf with one or two DATs(NT9X90BA) then provide one (1) P0729128 Label.
- 7) When equipping one half SD(storage device) shelf with a combination of one Disk(NT9X90AB) and one DATs(NT9X90BA) then provide one (1) P0724513 Label.
- 8) When equipping one half SD(storage device) shelf with one or two Disk(NT9X90AB) then provide one (1) P0724360 Label.

- RUL7
- 1) When a provided shelf is not equipped with APs, FPs or SDs, provide one (1) NT9X01FB Filler Packfill to satisfy the forced air cooling requirements of the frame. (Designation Labels P0687764 and P0687765 ARE INCLUDED with the NT9X01FB Filler Packfill)
 - 2) When a shelf is not equipped, provide one (1) NT0X24BD Blank Shelf to satisfy the forced air cooling requirements of the frame.

RUL8 1) Reserved.

RUL9 1) Provide as per EMA15-05-001.

RUL10 1) SCSI cables are provided based on the physical length from the FP to the SD, and between SDs in the chain. Each diagram in the table below depicts a cabinet configuration, with shelves 39, 26, 13 and 00 shown from top to bottom. "FP" represents a File Processor, "SD" a space allotted for a Storage Device, and "-" a blank space or Application Processor. The digit following FP or SD indicates which SCSI bus the device belongs to (eg. SD0 is a space allocated to a Storage Device on SCSI bus 0. It is connected to all other SD0 devices and FP0.)

Select the configuration with the desired quantity of FPs and SD spaces, and provision the quantity of cable PECs indicated, as well as one (1) SCSI Cable Routing (RTG) label per cabinet to match the configuration of the APC.

Specwriters Note : Please ensure that both the Frame I.D. and the SCSI cable routing table are always referenced in the Specwriters notes section.

Table 1 - SCSI Cable Provisioning

QTY OF FPs	CABINET CONFIGURATION	CABLE LENGTH (INCHES)	QTY	PEC
1		55	3	NT9X0443
	FP0 -	60	4	NT9X0444
		65	3	NT9X0445
	SD0 SD0	70	5	NT9X0446
		75	1	NT9X0447
	SD0 SD0			
	SD0 SD0			

For cabinets configured with 1FP and 12SD, provision one SCSI RTG Label P0724434

1	<table><tr><td>FP0</td><td>-</td></tr><tr><td>SD0</td><td>-</td></tr><tr><td>SD0</td><td>SD0</td></tr><tr><td>SD0</td><td>SD0</td></tr></table>	FP0	-	SD0	-	SD0	SD0	SD0	SD0	40	1	NT9X0419
		FP0	-									
		SD0	-									
		SD0	SD0									
	SD0	SD0										
	45	2	NT9X0420									
	55	4	NT9X0443									
	60	1	NT9X0444									
65	3	NT9X0445										
70	4	NT9X0446										
	75	1	NT9X0447									

For cabinets configured with 1FP and 10SD, provision one SCSI RTG Label P0724435

1	FP0 -		55	1	NT9X0443
			60	1	NT9X0444
			65	2	NT9X0445
	- -		70	3	NT9X0446
			75	4	NT9X0447
	SD0 SD0		80	1	NT9X0448
	SD0 SD0				

For cabinets configured with 1FP and 8SD, provision one SCSI RTG Label P0724436

Table 1 - SCSI Cable Provisioning (continued)

QTY OF FPs	CABINET CONFIGURATION	CABLE LENGTH (INCHES)	QTY	PEC
-----	-----	-----	---	-----
1	FP0 -	65	1	NT9X0445
		70	2	NT9X0446
		75	1	NT9X0447
	- -	80	1	NT9X0448
		85	3	NT9X0449
	- -			
	SD0 SD0			

For cabinets configured with 1FP and 4SD, provision one
SCSI RTG Label P0724438

1	FP0 -	55	3	NT9X0443
		60	2	NT9X0444
		65	4	NT9X0445
	- -	70	2	NT9X0446
		75	1	NT9X0447
	SD0 -			
	SD0 SD0			

For cabinets configured with 1FP and 6SD, provision one
SCSI RTG Label P0724437

1	FP0 -	60	1	NT9X0444
		65	3	NT9X0445
		70	2	NT9X0446
	- -	75	1	NT9X0447
		80	1	NT9X0448
	- -			
	SD0 -			

For cabinets configured with 1FP and 2SD, provision one
SCSI RTG Label P0724439

Table 1 - SCSI Cable Provisioning (continued)

QTY OF FPs	CABINET CONFIGURATION	CABLE LENGTH (INCHES)	QTY	PEC
-----	-----	-----	---	-----
2	FP0 FP1	45	1	NT9X0420
		50	2	NT9X0442
	SD1 -	55	3	NT9X0443
		60	3	NT9X0444
	SD0 SD0	65	3	NT9X0445
		70	3	NT9X0446
	SD0 SD0	75	4	NT9X0447
		80	1	NT9X0448

For cabinets configured with 2FP and 10SD, provision one
SCSI RTG Label P0724430

2	FP0 FP1	55	1	NT9X0443
		60	1	NT9X0444
	- -	65	5	NT9X0445
		70	3	NT9X0446
	SD1 SD1	75	2	NT9X0447
		80	1	NT9X0448
	SD0 SD0	85	3	NT9X0449

For cabinets configured with 2FP and 8SD, provision one
SCSI RTG Label P0724431

2	FP0 FP1	60	1	NT9X0444
		65	4	NT9X0445
	- -	70	5	NT9X0446
		75	2	NT9X0447
	SD1 -	80	1	NT9X0448
		85	3	NT9X0449
	SD0 SD0			

For cabinets configured with 2FP and 6SD, provision one
SCSI RTG Label P0724432

Table 1 - SCSI Cable Provisioning (continued)

QTY OF FPs	CABINET CONFIGURATION	CABLE LENGTH (INCHES)	QTY	PEC
-----	-----	-----	---	-----
2	FP0 FP1	60	1	NT9X0444
		65	4	NT9X0445
	- -	70	2	NT9X0446
		75	5	NT9X0447
	- -	80	3	NT9X0448
		85	1	NT9X0449
	SD0 SD1			

For cabinets configured with 2FP and 4SD, provision one
SCSI RTG Label P0724433

2	FP0 FP1	45	1	NT9X0420
		50	4	NT9X0442
	SD1 SD1	55	5	NT9X0443
		60	6	NT9X0444
	SD0 SD1	65	5	NT9X0445
		70	2	NT9X0446
	SD0 SD0	75	1	NT9X0447

For cabinets configured with 2FP and 12SD, provision one
SCSI RTG Label P0724429

3	FP0 FP1	50	1	NT9X0442
		55	3	NT9X0443
	FP2 -	60	4	NT9X0444
		65	5	NT9X0445
	SD1 SD2	70	5	NT9X0446
		75	2	NT9X0447
	SD0 SD0	80	1	NT9X0448
		85	3	NT9X0449

For cabinets configured with 3FP and 8SD, provision one
SCSI RTG Label P0724417

Table 1 - SCSI Cable Provisioning (continued)

QTY OF FPs	CABINET CONFIGURATION	CABLE LENGTH (INCHES)	QTY	PEC
3	FP0 FP1	35	1	NT9X0416
		40	3	NT9X0419
		45	2	NT9X0420
	FP2 -	50	1	NT9X0442
		55	1	NT9X0443
	SD2 -	60	1	NT9X0444
		65	4	NT9X0445
	SD0 SD1	70	2	NT9X0446
		75	5	NT9X0447
		80	3	NT9X0448
		85	1	NT9X0449

For cabinets configured with 3FP and 6SD, provision one SCSI RTG Label P0724428

4	FP0 FP1	35	1	NT9X0416
		40	4	NT9X0419
		45	5	NT9X0420
	FP2 FP3	50	4	NT9X0442
		55	1	NT9X0443
	SD2 SD3	60	2	NT9X0444
		65	4	NT9X0445
	SD0 SD1	70	2	NT9X0446
		75	5	NT9X0447
		80	3	NT9X0448
		85	1	NT9X0449

For cabinets configured with 4FP and 8SD, provision one SCSI RTG Label P0724416

- RUL11 1) Provision the circuit pack quantities indicated to equip one half-shelf to provide capacity for Storage Devices.

PEC	Quantity per half-shelf
NT9X91AC	2
NT9X19AA	1
NT9X19BA	9
NT9X89BA	4

- RUL12 1) Provision the circuit pack quantities indicated to equip one full shelf to provide capacity for Storage Devices.

PEC	Quantity per full-shelf
-----	-----
NT9X91AC	4
NT9X19AA	2
NT9X19BA	18
NT9X89AA	8

- RUL13 1) Provision the circuit pack quantities indicated to equip one right half of a shelf on the APC Cabinet with Filler Packs.

PEC	Quantity per half-shelf
-----	-----
NT9X19CA	2
NT9X19AA	13
NT9X19BA	13
NT9X0314	1

- RUL14 1) Provision the NTZZ35KA to equip the right half of the storage device shelf with Filler Packs in conjunction with the NTZZ35WA.

PEC	Quantity per half-shelf
-----	-----
NT9X19AA	12

- RUL15 1) Provision one (1) NT9X0314 Terminator FSP Plug at the FSP for every two (2) NT9X19CA equipped.

- RUL17 1) Provide one (1) NT9X9531 Horizontal Power Cabling Interface Kit when powering the NT9X80CA cabinet from the NTRX31AA or from NTRX31BA CPDC cabinet which is in the same lineup as the NT9X80CA. This kit includes power cables, terminal blocks, and miscellaneous mounting hardware.

- 2) Provide one (1) NT9X9532 stand-alone cabling interface kit when powering the NT9X80CA cabinet from the seven foot PDC frame or powering from the new CPDC (NTRX31CA) cabinet, or powering from the NTRX31AA or from the NTRX31BA CPDC cabinet which is the different lineup than the NT9X80CA. This kit includes cables, filters, and miscellaneous mounting hardware.

- RUL18 1) Provide one (1) A0368392 TB1 FSP Terminal Block Cover Assembly in all international applications.

- RUL19 1) For the NT9X7204 LIS shelf assembly, provide:
- two (2) NT9X96AA LIS FBUS controller CP's
 - two (2) NT9X98AA LIS Fiber Interface PB's
 - one (1) NTEX20AA Intra FBUS A Termination PB
 - one (1) NTEX20BA Intra FBUS B Termination PB
 - ten (10) NT9X19BA Filler Paddleboards
- 2) For the LIS shelf, provision one (1) NT9X6534 Bulkhead Assembly Left, one (1) NT9X6580 Bulkhead Assembly Right AND one (1) NT9X9820 FLIS Cable Assembly.
- 3) Provision one (1) NTEX5025 Bulkhead cover plate assembly for each unequipped position in the NT9X6534 or NT9X6580 bulkheads.
- 4) Provide one (1) P0736273 optical fiber danger label per link interface shelf assembly NT9X7204.
- 5) Provision one (1) rear bottom designation label, one (1) rear top designation label, one (1) front top designation label, and one (1) FLIS Designation strip (REAR) per LIS shelf provisioned.
- 6) Provision four (4) P097F813 screws, one (1) P0284154 washer and one (1) P0183220 locker washer when a link interface shelf assembly NT9X7204 is required in shelf position 26.
- 7) Provision one (1) sheet of LIU cable routing labels per half shelf when EIU's are provisioned.

SHELF	SLOTS	LABEL
-----	-----	-----
26	31R-21R	P0735397
26	19R-09R	P0714420

NOTE: An office to be equipped with a (F)LIS has to be pre-configured with

- NT9X13DC Processor (to raise MS memory capacity to 10 MB)
- 2 Inter MS Links(IMLS)

- RUL20 1) Provision NT9X19AA Filler Face Plates and NT9X19BA Paddleboard Filler Face Plates for the unoccupied slots.

- RUL21 1) Provide TWO (2) NT9X30AA and TWO (2) NT9X31AA power converters for each NT9X7204 shelf when the DUAL POWER REDUNDANCY feature is not required.
- RUL22 1) Provide FOUR (4) NTDX16AA Power Converter, FOUR (4) P0748922 Designation Labels and TWO (2) NT9X2825 Power Interface Units per shelf NT9X7204 when DUAL POWER REDUNDANCY is required or as per customer requirement. (-60V DUAL POWER REDUNDANCY is not a valid option on the FLIS frame). (Power converters -48V option is not available until BASE04/TL03 and above).
- RUL23 1) Provide the Ethernet interface equipment shown when IEC billing is to be provided on an APC cabinet. This is the only approved FLIS configuration for an IEC billing server.
- RUL24 1) Provide one (1) P0736058 APC terminal block designation strip per application processor cabinet when powering the application processor cabinet in a streamline line up.
- RUL25 1) Provide one (1) P0736059 APC Power Filter Label per application processor cabinet when powering the application processor cabinet in a non-streamline line up or in a stand alone application.

APC (C/42) -60V

PEC CODE: NTZZ35PB

CPC CODE: B0240856

| RATING: MD

REPLACES: Not Applicable

REPLACED BY: NT9X80CA

ABBREVIATION NAME: APC

ENGINEERING DESCRIPTION: The APC (Application Processor Cabinet) provides increased processing and data management power required for running software applications such as DMS Service Control Point and Billing Server. Application Processor Shelf can house up to two Application Processor (AP) or File Processor (FP) units. The Storage Device Shelf can house up to two Storage Devices (SDs). Each SD consumes one half shelf and comprises a pair of mass storage units (disk or tape drives). SCSI cables are used to interconnect an FP to one or more SDs in a daisy chain arrangement. Shelves and interconnect cabling are provisionable, subject to certain restrictions. The APC comes provided with -60V capability.

REFERENCE DOCUMENTATION: MS9X80CA 01 07
SLZZ35PB 00 02

MARKETS: Applicable markets:

Europe

ISSUE AUTHOR: NTI: Rena Fisher Dept. 3471 (PPK)

MAIN CONTACT: NTI: Rena Fisher Dept. 3471 (PPK)

NTZZ35PB EMC4-04-APC-6 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 03 10	ECM 675 04	Introduce EMS section. ET46843 - Correct Cable Run Typo
94 04 29	ECM 675 05	ECD 018-41431 NT9X95BA repl. NT9X95AA Modify rules for Right filler.
94 06 09	ECM 675 06	Correct Memory Provisioning Order.
94 07 29	ECM 675 07	Introduce the 2 GByte Disk Storage. Correct mismatches with the AD. ECD 018-43238 2 GByte Disk changes. Add FSP Terminal Block cover. Other minor changes.
94 08 31	ECM 675 08	ET 19619-Corrects provisioning of the NT9X9531 & NT9X9532 power cabling kits.
95 02 22	ECM 675 09	EC 018-43242 SCSI RTG Labels. EC 018-43745 Introduce NT9X91AC Power Converter into APC and A&M the NT9X91AB Power Converter.
95 08 11	ECM 675 13	ET 27929. Correct end aisle cable.
95 08 29	ECM 675 14	EC 018-45801 Remove frame fail lights.
95 10 19	ECM 675 16	ET30399. Adds labels and rules for P0736058 and P0736059.
96 03 15	ECM 675 19	MD this BB.

The APC (C/42) -60V is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
EQUIPMENT	PEC	ABBR	QTY	POS	POS	RULE
Application Processor Cab.	NT9X80CA		1			AP
C42 Cabinet Mechanical Assy	NT9X95BA		1			AP-XXX
Frame Supervisory Panel -60V	NT9X03BA	FSP	1	52		AP
Cooling Unit (-60V)	NT9X95GU		1			AP
Power Terminal Block Kit (streamline)	NT9X9531					RUL17
Power Terminal Block Kit (standalone)	NT9X9532					RUL17
Terminator FSP Plug	NT9X0314			52		RUL13, RUL15
Application Processor Shelf	NT9X8101			XX		RUL1
Left Fiber Assembly Panel	NT9X6506			XX		RUL1
Right Fiber Assembly Panel	NT9X6503			XX		RUL1
APC AP LEFT(C/42)	NTZZ35QA			XX	1F	RUL2
APC FP LEFT(C/42)	NTZZ35RA			XX	1F	RUL2
24Mb Memory CP	NT9X14DB			XX	11F-8F, 16F-19F	RUL3
Remote Term I/F PB	NT9X26AB			XX	13R,14R	RUL4
APC AP RIGHT(C/42)	NTZZ35SA			XX	24F	RUL2
APC FP RIGHT(C/42)	NTZZ35TA			XX	23F	RUL2
APC Pack Fill Right	NTZZ35JA			ZZ	20F	RUL13
24Mb Memory CP	NT9X14DB			XX	23F-20F, 28F-31F	RUL3
Remote Term I/F PB	NT9X26AB			XX	25R,26R	RUL4
APC Storage Device Shelf	NT9X8301			YY		RUL5
Left Fiber Assembly Panel	NT9X6506			YY		RUL5
Right Fiber Assembly Panel	NT9X6503			YY		RUL5
APC SD LEFT(C/42)	NTZZ35XA			YY	1F	RUL11
APC SD (FULL SHELF-C/42)	NTZZ35ZA			YY	1F	RUL12
600 MB Disk Storage Unit	NT9X90AA			YY	8F,14F	RUL6
2 GB Disk Storage Unit	NT9X90AB			YY	8F,14F	RUL6
1.3 GByte DAT Storage Unit	NT9X90BA			YY	8F,14F	RUL6
Filler Face Plate	NT9X19AA			YY	8F-13F, 14F-19F	RUL6

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
APC SD RIGHT	NTZZ35YA			YY	32F	RUL11
APC Pack Fill Right	NTZZ35JA			ZZ	20F	RUL13
Storage Device Pack Fill Right W PB	NTZZ35KA			YY	20F	RUL14
600 MB Disk Storage Unit	NT9X90AA			YY	20F, 26F	RUL6
2 GB Disk Storage Unit	NT9X90AB			YY	20F, 26F	RUL6
1.3 GByte DAT Storage Unit	NT9X90BA			YY	20F, 26F	RUL6
Filler Face Plate	NT9X19AA			YY	20F-25F 26F-31F	RUL6
Desig. Label(NT9X90AA)	P0729127			YY	8F, 14F	RUL6
Desig. Label(NT9X90AB)	P0724360			YY	8F, 14F	RUL6
Desig. Label(NT9X90BA)	P0729128			YY	8F, 14F	RUL6
Desig. Label(NT9X90AA & NT9X90BA)	P0730171			YY	8F, 14F	RUL6
Desig. Label(NT9X90AB & NT9X90BA)	P0724513			YY	8F, 14F	RUL6
APC Terminal Block	P0736058					RUL19
Designation Strip						
APC Cabinet Power Filter Labels	P0736059					RUL20
Filler Packfill	NT9X01FB			ZZ		RUL7
Blank Shelf	NT0X24BD			ZZ		RUL7
Streamline Exterior skin Assembly, Left, Gray	NTRX73AL					RUL9
Streamline Exterior skin Assembly, Right, Gray	NTRX73AM					RUL9
C42 Cabinet Mechanical Assy	NT9X95BA					NOTE10
SCSI Wiring Configuration	AR					RUL10
FSP Terminal Block (TB1)	A0368392			52		RUL18

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) Both planes of each unit are shown together in the equipment list, while the two half-shelves are shown separately.
- 2) XX, YY, and ZZ denote shelf position 00, 13, 26, or 39. XX denotes equipment that can be assigned to an Application Processor Shelf. One Application Processor Shelf is Always Provided in position 39. YY denotes equipment that can be assigned to a Storage Device Shelf. ZZ denotes equipment that can be assigned to any shelf position.
- 3) Maximum four (4) FPs are to be assigned beginning from shelf 39 (top of cabinet) moving downwards, and left to right across each shelf. Allot space for SDs from shelf 00 (bottom of cabinet) moving upwards, and left to right across each shelf. Leave no gaps in the assignment sequence.
- 4) The SCSI bus with the greatest number of devices is to be assigned first, beginning at the bottom of the cabinet, followed by the next largest bus, and so on.
- 5) Provision the Storage Devices according to the permissible configurations outlined in the ECM. SCSI cabling cannot leave the cabinet.
- 6) Within each SD space allotment, Power Converters, SCSI Device Interface Paddleboards, and SCSI cables must be equipped initially. The Storage Devices themselves can be provisioned in a future extension. Any type of SD may be

provisioned in an allotted quadrant, or a quadrant may be left unequipped. However, it is recommended to position the two members of a shadowed pair side by side within a half shelf.

- 7) It is permitted to leave shelf positions unequipped initially. In an extension, Application Processor and Storage Device Shelves can be added in the field in place of the initial Blank Shelf filler.
- 8) Disk storage devices are more sensitive to vibration than DAT storage devices. Where possible, disk drives should be located lower in the cabinet than DAT drives.
- 9) After the FPs and SDs are assigned per the above notes, APs may be assigned to AP shelves into the remaining half-shelf spaces. It is possible to fill a cabinet with APs alone, should an application require it.
- 10) Refer to NT9X95BA(EMA4-07-001) for additional mechanical hardware requirements for C42 Cabinet.

RULES:

- AP 1) When PEC NTZZ35PB is ordered, these items are provided.
- 2) The NTZZ35PB is comprised of the following:
 - NT9X9575 Cabinet Framework
- AP-XXX 1) This PEC is always provided on the NT9X80CA and is indicated here for completeness.
- 2) Refer to the NT9X95BA (EMA4-07-001) section for additional Mechanical Hardware requirements for C42 (S/DMS) Cabinet.

- RUL1 1) Provide one (1) NT9X8101 Application Processor Shelf when this shelf position is to contain Application Processors (APs) or File Processors (FPs).
- 2) Provide one (1) NT9X6506 Left Fiber Assembly Panel and one (1) NT9X6503 Right Fiber Assembly Panel for every NT9X8101 Application Processor Shelf provisioned. Shelf 39 already comes equipped with one (1) NT9X6506 and one (1) NT9X6503.

- RUL2 1) Provision the circuit pack quantities indicated to equip one half-shelf to provide a dual-plane AP or FP:

PEC	Quantity per half-shelf
-----	-----
NTDX15AB	2
NT9X86AA	2
NT9X13LA	2
NT9X21AB	2
NT9X62AA	2

- RUL3 1) Provision NT9X14DB 24 MByte Memory CP as required by the application. The application may designate one of the memory CPs as a hot spare; this is optional. Note that with the NT9X14DB, the first 4 MByte of data store is unusable.
- 2) In an Application Processor, a maximum of four (4) 24 MByte Memory CP may be equipped per plane (total eight (8) per AP) for a total of 92 MBytes of memory per plane. (96 - 4 = 92 MBytes) In a File Processor, a maximum of three (3) 24 MByte Memory CP may be equipped per plane (total six (6) per FP) for a total of 68 MBytes of memory per plane. (72 - 4 = 68 MBytes) In a FP, slots 10F-8F and 17F-19F, or 22F-20F and 29F-31F, are available for memory CP.
- 3) Assign memory CP beginning with the CP position nearest the CPU CP and work away from the CPU. For the left half-shelf the sequence is 10F and 17F, 9F and 18F, 8F and 19F. (11F and 16F are the first position if the unit is an AP). For the right half shelf the sequence is 22F and 29F, 21F and 30F, 20F and 31F. (23F and 28F are the first position if the unit is an AP).
- RUL4 1) Provision NT9X26AB if that vintage is equipped in the DMS-Core. New core installations should be provisioned with NT9X26AB.

- RUL5 1) Provide one (1) NT9X8301 Storage Device Shelf when this shelf position is to contain Storage Devices (SDs).

- 2) Provide one (1) NT9X6506 Left Fiber Assembly Panel and one (1) NT9X6503 Right Fiber Assembly Panel for every NT9X8301 Storage Device Shelf provisioned.

- RUL6 1) Provide one (1) NT9X90AA 600 MByte Disk Storage Device per quadrant when the application requires a hard disk drive in BCS36 and below.

Provide one (1) NT9X90AB 2 GByte Disk Storage device per quadrant when the application requires a hard disk drive in CSP-02 and higher. Existing applications utilizing the NT9X90AAs are not required to upgrade any of the storage devices. The NT9X90AB and the NT9X90AA are not supported in the shadowed set.

- 2) Provide one (1) NT9X90BA 1.3 GByte DAT Storage Device per quadrant when the application requires a Digital Audio Tape storage device. Provision DG60M Magnetic Tape Data Cartridge (blank) as required.
- 3) Provide six (6) NT9X19AA Filler Face Plates for each allocated quadrant not equipped with with an SD.
- 4) When equipping one half SD(storage device) shelf with a combination of one Disk(NT9X90AA) and one DATs(NT9X90BA) then provide one (1) P0730171 Label.
- 5) When equipping one half SD(storage device) shelf with one or two Disk(NT9X90AA) then provide one (1) P0729127 Label.
- 6) When equipping one half SD(storage device) shelf with one or two DATs(NT9X90BA) then provide one (1) P0729128 Label.
- 7) When equipping one half SD(storage device) shelf with a combination of one Disk(NT9X90AB) and one DATs(NT9X90BA) then provide one (1) P0724513 Label.
- 8) When equipping one half SD(storage device) shelf with one or two Disk(NT9X90AB) then provide one (1) P0724360 Label.

- RUL7 1) When a provided shelf is not equipped with APs, FPs or SDs, provide one (1) NT9X01FB Filler Packfill to satisfy the forced air cooling requirements of the frame. (Designation Labels P0687764 and P0687765 ARE INCLUDED with the NT9X01FB Filler Packfill)
- 2) When a shelf is not equipped, provide one (1) NT0X24BD Blank Shelf to satisfy the forced air cooling requirements of the frame. RUL8 1) Reserved.

RUL9 1) Provide as per EMA15-05-001.

RUL10 1) SCSI cables are provided based on the physical length from the FP to the SD, and between SDs in the chain. Each diagram in the table below depicts a cabinet configuration, with shelves 39, 26, 13 and 00 shown from top to bottom. "FP" represents a File Processor, "SD" a space allotted for a Storage Device, and "-" a blank space or Application Processor. The digit following FP or SD indicates which SCSI bus the device belongs to (eg. SD0 is a space allocated to a Storage Device on SCSI bus 0. It is connected to all other SD0 devices and FP0.)

Select the configuration with the desired quantity of FPs and SD spaces, and provision the quantity of cable PECs indicated, as well as one (1) SCSI Cable Routing (RTG) label per cabinet to match the configuration of the APC.

Specwriters Note : Please ensure that both the Frame I.D. and the SCSI cable routing table are always referenced in the Specwriters notes section.

Table 1 - SCSI Cable Provisioning

QTY OF FPs	CABINET CONFIGURATION	CABLE LENGTH (INCHES)	QTY	PEC
1	FP0 -	55	3	NT9X0443
		60	4	NT9X0444
	SD0 SD0	65	3	NT9X0445
		70	5	NT9X0446
	SD0 SD0	75	1	NT9X0447
	SD0 SD0			

For cabinets configured with 1FP and 12SD, provision one SCSI RTG Label P0724434

1	FP0 -	40	1	NT9X0419
		45	2	NT9X0420
	SD0 -	55	4	NT9X0443
		60	1	NT9X0444
	SD0 SD0	65	3	NT9X0445
		70	4	NT9X0446
	SD0 SD0	75	1	NT9X0447

For cabinets configured with 1FP and 10SD, provision one SCSI RTG Label P0724435

1	FP0 -	55	1	NT9X0443
		60	1	NT9X0444
	- -	65	2	NT9X0445
		70	3	NT9X0446
	SD0 SD0	75	4	NT9X0447
		80	1	NT9X0448
	SD0 SD0			

For cabinets configured with 1FP and 8SD, provision one SCSI RTG Label P0724436

Table 1 - SCSI Cable Provisioning (continued)

QTY OF FPs	CABINET CONFIGURATION	CABLE LENGTH (INCHES)	QTY	PEC
-----	-----	-----	---	-----
1	FP0 -	65	1	NT9X0445
		70	2	NT9X0446
	- -	75	1	NT9X0447
		80	1	NT9X0448
	- -	85	3	NT9X0449
	SD0 SD0			

For cabinets configured with 1FP and 4SD, provision one SCSI RTG Label P0724438

1	FP0 -	55	3	NT9X0443
		60	2	NT9X0444
	- -	65	4	NT9X0445
		70	2	NT9X0446
	SD0 -	75	1	NT9X0447
	SD0 SD0			

For cabinets configured with 1FP and 6SD, provision one SCSI RTG Label P0724437

1	FP0 -	60	1	NT9X0444
		65	3	NT9X0445
	- -	70	2	NT9X0446
		75	1	NT9X0447
	- -	80	1	NT9X0448
	SD0 -			

For cabinets configured with 1FP and 2SD, provision one SCSI RTG Label P0724439

Table 1 - SCSI Cable Provisioning (continued)

QTY OF FPs	CABINET CONFIGURATION	CABLE LENGTH (INCHES)	QTY	PEC
-----	-----	-----	---	-----
2	FP0 FP1	45	1	NT9X0420
		50	2	NT9X0442
	SD1 -	55	3	NT9X0443
		60	3	NT9X0444
	SD0 SD0	65	3	NT9X0445
		70	3	NT9X0446
	SD0 SD0	75	4	NT9X0447
		80	1	NT9X0448

For cabinets configured with 2FP and 10SD, provision one
SCSI RTG Label P0724430

2	FP0 FP1	55	1	NT9X0443
		60	1	NT9X0444
	- -	65	5	NT9X0445
		70	3	NT9X0446
	SD1 SD1	75	2	NT9X0447
		80	1	NT9X0448
	SD0 SD0	85	3	NT9X0449

For cabinets configured with 2FP and 8SD, provision one
SCSI RTG Label P0724431

2	FP0 FP1	60	1	NT9X0444
		65	4	NT9X0445
	- -	70	5	NT9X0446
		75	2	NT9X0447
	SD1 -	80	1	NT9X0448
		85	3	NT9X0449
	SD0 SD0			

For cabinets configured with 2FP and 6SD, provision one
SCSI RTG Label P0724432

Table 1 - SCSI Cable Provisioning (continued)

QTY OF FPs	CABINET CONFIGURATION	CABLE LENGTH (INCHES)	QTY	PEC
-----	-----	-----	---	-----
2	FP0 FP1	60	1	NT9X0444
		65	4	NT9X0445
	- -	70	2	NT9X0446
		75	5	NT9X0447
	- -	80	3	NT9X0448
		85	1	NT9X0449
	SD0 SD1			

For cabinets configured with 2FP and 4SD, provision one
SCSI RTG Label P0724433

2	FP0 FP1	45	1	NT9X0420
		50	4	NT9X0442
	SD1 SD1	55	5	NT9X0443
		60	6	NT9X0444
	SD0 SD1	65	5	NT9X0445
		70	2	NT9X0446
	SD0 SD0	75	1	NT9X0447

For cabinets configured with 2FP and 12SD, provision one
SCSI RTG Label P0724429

3	FP0 FP1	50	1	NT9X0442
		55	3	NT9X0443
	FP2 -	60	4	NT9X0444
		65	5	NT9X0445
	SD1 SD2	70	5	NT9X0446
		75	2	NT9X0447
	SD0 SD0	80	1	NT9X0448
		85	3	NT9X0449

For cabinets configured with 3FP and 8SD, provision one
SCSI RTG Label P0724417

Table 1 - SCSI Cable Provisioning (continued)

QTY OF FPs	CABINET CONFIGURATION	CABLE LENGTH (INCHES)	QTY	PEC
3	FP0 FP1	35	1	NT9X0416
		40	3	NT9X0419
		45	2	NT9X0420
	FP2 -	50	1	NT9X0442
		55	1	NT9X0443
		60	1	NT9X0444
	SD2 -	65	4	NT9X0445
		70	2	NT9X0446
		75	5	NT9X0447
	SD0 SD1	80	3	NT9X0448
		85	1	NT9X0449

For cabinets configured with 3FP and 6SD, provision one SCSI RTG Label P0724428

4	FP0 FP1	35	1	NT9X0416
		40	4	NT9X0419
		45	5	NT9X0420
	FP2 FP3	50	4	NT9X0442
		55	1	NT9X0443
		60	2	NT9X0444
	SD2 SD3	65	4	NT9X0445
		70	2	NT9X0446
		75	5	NT9X0447
	SD0 SD1	80	3	NT9X0448
		85	1	NT9X0449

For cabinets configured with 4FP and 8SD, provision one SCSI RTG Label P0724416

- RUL11 1) Provision the circuit pack quantities indicated to equip one half-shelf to provide capacity for Storage Devices.

PEC	Quantity per half-shelf
NT9X91AC	2
NT9X19AA	1
NT9X19BA	9
NT9X89BA	4

- RUL12 1) Provision the circuit pack quantities indicated to equip one full shelf to provide capacity for Storage Devices.

PEC	Quantity per full-shelf
-----	-----
NT9X91AC	4
NT9X19AA	2
NT9X19BA	18
NT9X89AA	8

- RUL13 1) Provision the circuit pack quantities indicated to equip one right half of a shelf on the APC Cabinet with Filler Packs.

PEC	Quantity per half-shelf
-----	-----
NT9X19CA	2
NT9X19AA	13
NT9X19BA	13
NT9X0314	1

- RUL14 1) Provision the NTZZ35KA to equip the right half of the storage device shelf with Filler Packs in conjunction with the NTZZ35WA.

PEC	Quantity per half-shelf
-----	-----
NT9X19AA	12

- RUL15 1) Provision one (1) NT9X0314 Terminator FSP Plug at the FSP for every two (2) NT9X19CA equipped.

- RUL17 1) Provide one (1) NT9X9531 Horizontal Power Cabling Interface Kit when powering the NT9X80CA cabinet from the NTRX31BA CPDC cabinet which is in the same lineup as the NT9X80CA. This kit includes: power cables, terminal blocks, and miscellaneous mounting hardware.

- 2) Provide one (1) NT9X9532 stand-alone cabling interface kit when powering the NT9X80CA cabinet from a 7 foot PDC frame or powering from the new CPDC (NTRX31CA) cabinet, or powering from the NTRX31AA or from the NTRX31BA CPDC cabinet which is in a different lineup than the NT9X80CA. This kit includes: cables, filters, and miscellaneous mounting hardware.

- RUL18 1) Provide one (1) A0368392 TB1 FSP Terminal Block Cover Assembly in all international applications.

- RUL19 1) Provide one (1) P0736058 APC terminal block designation strip per application processor cabinet when powering the application processor cabinet in a streamline line up.
- RUL20 1) Provide one (1) P0736059 APC Power Filter Label per application processor cabinet when powering the application processor cabinet in in a non-streamline line up or in a stand alone application.

APC FILE PROCESSOR LEFT

PEC CODE: NTZZ35CA

| CPC CODE: B0234568

| RATING: MD

| REPLACES: N/A

| REPLACED BY: No Replacement

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: APC File Processor Left

REFERENCE DOCUMENTATION: MSZZ35CA 00 00

SLZZ35CA 00 00

NTZZ35CA REL 00

MARKETS: Applicable markets:

Canada
US

ISSUE AUTHOR: NTI: Bob Belvin DEPT. 3471 (PPK)

MAIN CONTACT: NTI: Rena Fisher Dept. 3471 (PPK)

NTZZ35CA EMC4-04-FP-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 95 10 23	----- ECM 512 06	Previous history not available MD PECs NT9X80BA, NTZZ35BA, CA, DA, EA, FA, GA, HA per EC18-41001.

The APC File Processor Left is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Power Converter +/-5V	NTDX15AA		2	XX	1F, 4F	AP
Filler Faceplate	NT9X19AA		1	XX	7F	AP
Dual Port Msg Controller CP	NT9X86AA		2	XX	12F, 15F	AP
CPU (68030) 40MHz CP	NT9X13LA		2	XX	13F, 14F	AP
Filler Paddleboard	NT9X19BA		3	XX	7R, 9R, 18R	AP
Bus Terminator PB	NT9X21AB		2	XX	8R, 19R	AP
2-Port Subrate DS-512 PB	NT9X62AA		2	XX	12R, 15R	AP
Dual Access Buffer Memory CP	NT9X87AA		2	XX	11F, 16F	AP
Desig. Label (NT9X87AA)	P0729673		2	XX	11F, 16F	AP
Dual SCSI Interface Proc PB	NT9X88AA		4	XX	10R, 11R, 16R, 17R	AP
Desig. Label (NT9X88AA)	P0729120		4	XX	10R, 11R, 16R, 17R	AP
Desig. Strip(Application Processor Shelf Front)	P0729132		1	XX	1F-19F	AP
Desig. Strip(Application Processor Shelf Rear)	P0729124		1	XX	7R-19R	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

AP 1) When PEC NTZZ35CA is ordered, these items are provided.

APC FILE PROCESSOR RIGHT

PEC CODE: NTZZ35EA

| CPC CODE: B0234570

| RATING: MD

| REPLACES: N/A

| REPLACED BY: No Replacement

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: APC File Processor Right

REFERENCE DOCUMENTATION: MSZZ35EA 00 00

SLZZ35EA 00 00

NTZZ35EA REL 00

MARKETS: Applicable markets:

Canada
US

ISSUE AUTHOR: NTI: Bob Belvin DEPT. 3471 (PPK)

MAIN CONTACT: NTI: Rena Fisher Dept. 3471 (PPK)

NTZZ35EA EMC4-04-FP-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 95 10 23	----- ECM 512 06	Previous history not available MD PECs NT9X80BA, NTZZ35BA, CA, DA, EA, FA, GA, HA per EC18-41001.

The APC File Processor Right is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Dual Port Msg Controller CP	NT9X86AA		2	XX	24F, 27F	AP
CPU (68030) 40MHz CP	NT9X13LA		2	XX	25F, 26F	AP
Filler Faceplate	NT9X19AA		1	XX	32F	AP
Filler Paddleboard	NT9X19BA		3	XX	21R, 30R 32R	AP
Power Converter +/-5V	NTDX15AA		2	XX	33F, 36F	AP
Bus Terminator PB	NT9X21AB		2	XX	20R, 31R	AP
Dual SCSI Interface Proc PB	NT9X88AA		4	XX	22R, 23R, 28R, 29R	AP
Desig. Label (NT9X88AA)	P0729120		4	XX	22R, 23R 28R, 29R	AP
Dual Access Buffer Memory CP	NT9X87AA		2	XX	23F, 28F	AP
Desig. Label (NT9X87AA)	P0729673		2	XX	23F, 28F	AP
2-Port Subrate DS-512 PB	NT9X62AA		2	XX	24R, 27R	AP
Desig. Strip(Application Processor Shelf Front)	P0729133		1	XX	20F-36F	AP
Desig. Strip(Application Processor Shelf Rear)	P0729122		1	XX	20R-32R	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

AP 1) When PEC NTZZ35EA is ordered, these items are provided.

APC PACK FILL RIGHT

PEC CODE: NTZZ35JA

CPC CODE: B0-----

| RATING: MD

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME:

ENGINEERING DESCRIPTION: APC Pack Fill Right is used to fill the
right half of an Application Processor Cabi-
net shelf.REFERENCE DOCUMENTATION: MSZZ35JA 00 00
SLZZ35JA 00 00
NTZZ35JA REL 00

MARKETS: Applicable markets:

Canada
US

ISSUE AUTHOR: NTI: Rena Fisher Dept. 3471 (PPK)

MAIN CONTACT: NTI: Rena Fisher Dept. 3471 (PPK)

NTZZ35JA EMC4-04-FP-3 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 04 29	ECM 675 05	Change Title of Building Block.
96 03 15	ECM 675 19	Remove item from Stocklist. MD this building block.

The APC Pack Fill Right is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Filler Faceplate	NT9X19AA		13	ZZ	20F-32F	AP
Filler Paddleboard	NT9X19BA		13	ZZ	20R-32R	AP
Filler Face Plate	NT9X19CA		2	ZZ	33F, 36F	AP
Terminator FSP Plug	NT9X0314		1	ZZ		AP
Desig. Strip(Application Processor Shelf Front)	P0729134		1	ZZ	20F-36F	AP
Desig. Strip(Application Processor Shelf Rear)	P0729123		1	ZZ	20R-32R	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase.
Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if
they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufac-
tured and cannot be ordered.

NOTES:

RULES:

AP 1) When PEC NTZZ35JA is ordered, these items are provided.

APC STORAGE DEVICE LEFT

PEC CODE: NTZZ35FA

| CPC CODE: B0234580

| RATING: MD

| REPLACES: N/A

| REPLACED BY: No Replacement

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: APC Storage Device Left

REFERENCE DOCUMENTATION: MSZZ35FA 00 00

SLZZ35FA 00 00

NTZZ35FA REL 00

MARKETS: Applicable markets:

Canada
US

ISSUE AUTHOR: NTI: Bob Belvin DEPT. 3471 (PPK)

MAIN CONTACT: NTI: Rena Fisher Dept. 3471 (PPK)

NTZZ35FA EMC4-04-SD-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 95 10 23	----- ECM 512 06	Previous history not available MD PECs NT9X80BA, NTZZ35BA, CA, DA, EA, FA, GA, HA per EC18-41001.

The APC Storage Device Left is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Storage Device Power Conv	NT9X91AA		2	YY	1F, 4F	AP
Filler Faceplate	NT9X19AA		1	YY	7F	AP
Filler Paddleboard	NT9X19BA		9	YY	7R, 10R-13R, 16R-19R	AP
SCSI Dev I/F (half Shelf) PB	NT9X89BA		4	YY	8R, 9R, 14R, 15R	AP
Desig. Strip(Storage Device Shelf Front)	P0729126		1	YY	1F-19F	AP
Desig. Strip(Storage Device Shelf Rear)	P0729130		1	YY	7R-19R	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) The Desig. Strip(Storage Device Shelf Front) P0729126 contains a total of 30 labels. Cut the strip in half(15 on each side) and use the left half side. Insert this strip in slots 1F-19F at the front of the cabinet.
- 2) The Desig. Strip(Storage Device Shelf Rear) P0729130 contains a total of 26 labels. Cut the strip in half(13 on each side) and use the right half side. Insert this strip in slots 7R-19R at the rear of the cabinet.

RULES:

AP 1) When PEC NTZZ35FA is ordered, these items are provided.

APC STORAGE DEVICE RIGHT

PEC CODE: NTZZ35GA

| CPC CODE: B0234571

| RATING: MD

| REPLACES: N/A

| REPLACED BY: No Replacement

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: APC Storage Device Right

REFERENCE DOCUMENTATION: MSZZ35GA 00 00

SLZZ35GA 00 00

NTZZ35GA REL 00

MARKETS: Applicable markets:

Canada
US

ISSUE AUTHOR: NTI: Bob Belvin DEPT. 3471 (PPK)

MAIN CONTACT: NTI: Rena Fisher Dept. 3471 (PPK)

NTZZ35GA EMC4-04-SD-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 95 10 23	----- ECM 512 06	Previous history not available MD PECs NT9X80BA, NTZZ35BA, CA, DA, EA, FA, GA, HA per EC18-41001.

The APC Storage Device Right is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
SCSI Dev I/F (Half-Shelf) PB	NT9X89BA		4	YY	20R,21R, 26R,27R	AP
Filler Paddleboard	NT9X19BA		9	YY	22R-25R, 28R-32R	AP
Filler Faceplate	NT9X19AA		1	YY	32F	AP
Storage Device Power Conv	NT9X91AA		2	YY	33F,36F	AP
Desig. Strip(Storage Device Shelf Front)	P0729126		1	YY	20F-36F	AP
Desig. Strip(Storage Device Shelf Rear)	P0729130		1	YY	20R-32R	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) The Desig. Strip(Storage Device Shelf Front) P0729126 contains a total of 30 labels. Cut the strip in half(15 on each side) and use the right half side. Insert this strip in slots 20F-36F at the front of the cabinet.
- 2) The Desig. Strip(Storage Device Shelf Rear) P0729130 contains a total of 26 labels. Cut the strip in half(13 on each side) and use the left half side. Insert this strip in slots 20R-32R at the rear of the cabinet

RULES:

AP 1) When PEC NTZZ35GA is ordered, these items are provided.

APC STORAGE DEVICE (FULL SHELF)

PEC CODE: NTZZ35HA

| CPC CODE: B0

| RATING: MD

| REPLACES: N/A

| REPLACED BY: No Replacement

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: APC Storage Device (Full Shelf)

REFERENCE DOCUMENTATION: MSZZ35HA 00 00

SLZZ35HA 00 00

NTZZ35HA REL 00

MARKETS: Applicable markets:

Canada
US

ISSUE AUTHOR: NTI: Bob Belvin DEPT. 3471 (PPK)

MAIN CONTACT: NTI: Rena Fisher Dept. 3471 (PPK)

NTZZ35HA EMC4-04-SD-3 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 95 10 23	----- ECM 512 06	Previous history not available MD PECs NT9X80BA, NTZZ35BA, CA, DA, EA, FA, GA, HA per EC18-41001.

The APC Storage Device (Full Shelf) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Storage Device Power Conv	NT9X91AA		4	YY	1F, 4F, 33F, 36F	AP
Filler Faceplate	NT9X19AA		2	YY	7F, 32F	AP
Filler Paddleboard	NT9X19BA		18	YY	7R, 10R-13R, 16R-19R, 22R-25R, 28R-32R	AP
SCSI Device I/F (Shelf) PB	NT9X89AA		8	YY	8R, 9R, 14R, 15R, 20R, 21R, 26R, 27R	AP
Desig. Strip(Storage Device Shelf Front)	P0729126		1	YY	1F-36F	AP
Desig. Strip(Storage Device Shelf Rear)	P0729129		1	YY	7R-32R	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) The Desig. Strip(Storage Device Shelf Front) P0729126 contains a total of 30 labels. Insert this strip in slots 1F-36F at the front of the cabinet.

- 2) The Desig. Strip(Storage Device Shelf Rear) P0729130 contains a total of 26 labels. Insert this strip in slots 7R-32R at the rear of the cabinet.

RULES:

- AP 1) When PEC NTZZ35HA is ordered, these items are provided.

STORAGE DEVICE PACK FILL RIGHT WITH PB

PEC CODE: NTZZ35KA

CPC CODE: B0xxxxxx

| RATING: MD

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME:

ENGINEERING DESCRIPTION: Storage Device Pack Fill Right is used to fill the right half of the storage device shelf when a SDF(NTZZ35HA) is used, and there is no storage device present on the right. Note that there are paddleboards on the right half of the shelf.

REFERENCE DOCUMENTATION: MSZZ35KA 00 00
SLZZ35KA 00 00
NTZZ35KA REL 00

MARKETS: Applicable markets:

Canada
US

ISSUE AUTHOR: NTI: Rena Fisher Dept. 3471 (PPK)

MAIN CONTACT: NTI: Rena Fisher Dept. 3471 (PPK)

NTZZ35KA EMC4-04-SD-4 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 96 03 15	----- ECM 675 19	Previous history not available MD this building block.

The Storage Device Pack Fill Right With PB is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Filler Faceplate	NT9X19AA		12	YY	20F-25F 26F-31F	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) The Desig. Strip/Labels are included with the NTZZ35HA.

RULES:

- AP 1) When PEC NTZZ35KA is ordered, these items are provided.

| STORAGE DEVICE PACK FILL RIGHT W/O PB

NTZZ35LA

| RATING: Manufacture Discontinued

ABBREVIATION NAME:

ENGINEERING DESCRIPTION: Storage Device Pack Fill Right is used to fill the right half of the storage device shelf when a SDL(NTZZ35FA) is used, and there is no storage device present on the right. Note that there are NO paddleboards on the right half of the shelf

REFERENCE DOCUMENTATION: MSZZ35LA 00 00

SLZZ35LA 00 00

NTZZ35LA REL 00

The Storage Device Pack Fill Right w/o PB is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Filler Faceplate	NT9X19AA		13	YY	20F-25F, 26F-31F, 32	AP
Filler Paddleboard	NT9X19BA		13	YY	22R-25R, 28R-32R, 20R,21R, 26R,27R	AP
Filler Faceplate	NT9X19CA		2	YY	33F,36F	AP
Terminator FSP Plug	NT9X0314		2	YY		AP
Desig. Strip(Application Processor Shelf Front)	P0729134		1	YY	20F-36F	AP
Desig. Strip(Application processor Shelf Rear)	P0729123		1	YY	20R-32R	AP

RULES:

AP 1) When PEC NTZZ35LA is ordered, these items are provided.

APC SD (FULL SHELF-C/42)

PEC CODE: NTZZ35WA

CPC CODE:

| RATING: MD

REPLACES: Not Applicable

REPLACED BY: NTZZ35ZA

ABBREVIATION NAME:

ENGINEERING DESCRIPTION: Provides the Paddleboards, Power Converters
necessary to equip an entire storage shelf
for Storage Devices.REFERENCE DOCUMENTATION: MS9X80CA 01 01
SLZZ35WA 00 01
NTZZ35WA REL 00

MARKETS: Applicable markets:

Canada
US
CALA
ASIA/PACIFIC
EUROPE

ISSUE AUTHOR: NTI: Rena Fisher Dept. 3471 (PPK)

MAIN CONTACT: NTI: Rena Fisher Dept. 3471 (PPK)

NTZZ35WA EMC4-04-SDF CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 03 17	ECM 675 01	Introduction of Building Blocks
95 02 22	ECM 675 09	Introduce Global Power Supply in new BB (NTZZ35ZA); A&M this BB.
96 03 15	ECM 675 19	MD this BB.

The APC SD (Full Shelf-C/42) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
EQUIPMENT	PEC	ABBR	QTY	POS	POS	RULE
Storage Device Power Conv	NT9X91AB		4	YY	1F, 4F, 33F, 36F	AP
Filler Faceplate	NT9X19AA		2	YY	7F, 32F	AP
Filler Paddleboard	NT9X19BA		18	YY	7R, 10R-13R, 16R-19R, 22R-25R, 28R-32R	AP
SCSI Device I/F (Shelf) PB	NT9X89AA		8	YY	8R, 9R, 14R, 15R, 20R, 21R, 26R, 27R	AP
Desig. Strip(Storage Device Shelf Front)	P0737162		1	YY	1F-19F	AP
Desig. Strip(Storage Device Shelf Rear)	P0737159		1	YY	7R-19R	AP
Desig. Strip(Storage Device Shelf Front)	P0737163		1	YY	20F-36F	AP
Desig. Strip(Storage Device Shelf Rear)	P0737157		1	YY	20R-32R	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) The Desig. Strip(Storage Device Shelf Front) P0729126 contains a total of 30 labels. Insert this strip in slots 1F-36F at the front of the cabinet.
- 2) The Desig. Strip(Storage Device Shelf Rear) P0729130 contains a total of 26 labels. Insert this strip in slots 7R-32R at the rear of the cabinet.

RULES:

- AP 1) When PEC NTZZ35WA is ordered, these items are provided.

APC SD LEFT(C/42)

PEC CODE: NTZZ35UA

CPC CODE:

| RATING: MD

REPLACES: Not Applicable

REPLACED BY: NTZZ35XA

ABBREVIATION NAME:

ENGINEERING DESCRIPTION: Provides the Paddleboards, Power Converters necessary to equip the left side of a storage shelf for Storage Devices.

REFERENCE DOCUMENTATION: MS9X80CA 01 01
SLZZ35UA 00 00
NTZZ35UA REL 00

MARKETS: Applicable markets:

Canada
US
CALA
ASIA/PACIFIC
EUROPE

ISSUE AUTHOR: NTI: Rena Fisher Dept. 3471 (PPK)

MAIN CONTACT: NTI: Rena Fisher Dept. 3471 (PPK)

NTZZ35UA EMC4-04-SDL CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 03 17	ECM 675 01	Introduction of Building Blocks.
95 02 22	ECM 675 09	Introduce Global Power Supply in new BB (NTZZ35XA); A&M this BB.
96 03 15	ECM 675 19	MD this BB.

The APC SD Left(C/42) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
EQUIPMENT	PEC	ABBR	QTY	POS	POS	RULE
Storage Device Power Conv	NT9X91AB		2	YY	1F, 4F	AP
Filler Faceplate	NT9X19AA		1	YY	7F	AP
Filler Paddleboard	NT9X19BA		9	YY	7R, 10R-13R, 16R-19R	AP
SCSI Dev I/F (half Shelf) PB	NT9X89BA		4	YY	8R, 9R, 14R, 15R	AP
Desig. Strip(Storage Device Shelf Front)	P0737162		1	YY	1F-19F	AP
Desig. Strip(Storage Device Shelf Rear)	P0737159		1	YY	7R-19R	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

AP 1) When PEC NTZZ35UA is ordered, these items are provided.

APC SD RIGHT(C/42)

PEC CODE: NTZZ35VA

CPC CODE:

| RATING: MD

REPLACES: Not Applicable

REPLACED BY: NTZZ35YA

ABBREVIATION NAME:

ENGINEERING DESCRIPTION: Provides the Paddleboards, Power Converters necessary to equip the right side of a storage shelf for Storage Devices.

REFERENCE DOCUMENTATION: MS9X80CA 01 01
SLZZ35VA 00 00
NTZZ35VA REL 00

MARKETS: Applicable markets:

Canada
US
CALA
ASIA/PACIFIC
EUROPE

ISSUE AUTHOR: NTI: Rena Fisher Dept. 3471 (PPK)

MAIN CONTACT: NTI: Rena Fisher Dept. 3471 (PPK)

NTZZ35VA EMC4-04-SDR CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 03 17	ECM 675 01	Introduction of Building Blocks.
95 02 22	ECM 675 09	Introduce Global Power Supply in new BB (NTZZ35YA); A&M this BB.
96 03 15	ECM 675 19	MD this BB.

The APC SD Right(C/42) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
EQUIPMENT	PEC	ABBR	QTY	POS	POS	RULE
SCSI Dev I/F (Half-Shelf) PB	NT9X89BA		4	YY	20R,21R, 26R,27R	AP
Filler Paddleboard	NT9X19BA		9	YY	22R-25R, 28R-32R	AP
Filler Faceplate	NT9X19AA		1	YY	32F	AP
Storage Device Power Conv	NT9X91AB		2	YY	33F,36F	AP
Desig. Strip(Storage Device Shelf Front)	P0737163		1	YY	20F-36F	AP
Desig. Strip(Storage Device Shelf Rear)	P0737157		1	YY	20R-32R	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

AP 1) When PEC NTZZ35VA is ordered, these items are provided.

APPLICATION PROCESSOR CABINET

NTZZ35AA

RATING: Manufactured Discontinued

ABBREVIATION NAME: APC

ENGINEERING DESCRIPTION: The Application Processor Cabinet (APC) houses Application Processor Shelves and Storage Device Shelves.

Each shelf is divided into two independent half-shelves. The Application Processor Shelf can house up to two Application Processor (AP) or File Processor (FP) units. The Storage Device Shelf can house up to two Storage Devices (SDs). Each SD consumes one half shelf and comprises a pair of mass storage units (disk or tape drives).

SCSI cables are used to interconnect an FP to one or more SDs in a daisy chain arrangement. Shelves and interconnect cabling are provisionable, subject to certain restrictions.

REFERENCE DOCUMENTATION: N/A

The Application Processor Cabinet is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Application Proc Cabinet	NT9X80BA		1			AP
DMS-CORE Common Cabinet	NT9X0101		1			AP-XXX
Power Terminal Block Kit	NTEX5001					RUL11
Terminator FSP Plug	NT9X0314			52		RUL17
Application Processor Shelf	NT9X8101		1	39		AP
Application Processor Shelf	NT9X8101			XX		RUL1
APC Application Proc (Left)	NTZZ35BA			XX		RUL2
APC File Processor (Left)	NTZZ35CA			XX		RUL2
24Mb Memory CP	NT9X14DB			XX	8F-11F, 19F-16F	RUL3
Remote Term I/F PB	NT9X26AB			XX	13R,14R	RUL4
APC Application Proc (Right)	NTZZ35DA			XX		RUL2
APC File Processor (Right)	NTZZ35EA			XX		RUL2
File Proc Pack Fill Right	NTZZ35JA			XX		RUL14
24Mb Memory CP	NT9X14DB			XX	20F-23F, 31F-28F	RUL3
Remote Term I/F PB	NT9X26AB			XX	25R,26R	RUL4
APC Storage Device Shelf	NT9X8301			YY		RUL5
APC Storage Device (Left)	NTZZ35FA			YY		RUL12
APC Storage Device (Full Sh)	NTZZ35HA			YY		RUL13
600 MB Disk Storage Unit	NT9X90AA			YY	8F,14F	RUL6
1.3 GByte DAT Storage Unit	NT9X90BA			YY	8F,14F	RUL6
Filler Face Plate	NT9X19AA			YY	8F-13F, 14F-19F	RUL6
APC Storage Device (Right)	NTZZ35GA			YY		RUL12
Stor Dev Packfill Right W PB	NTZZ35KA			YY		RUL15
Stor Dev Packfill Rg W/O PB	NTZZ35LA			YY		RUL16
600 MB Disk Storage Unit	NT9X90AA			YY	20F,26F	RUL6
1.3 GByte DAT Storage Unit	NT9X90BA			YY	20F,26F	RUL6
Filler Face Plate	NT9X19AA			YY	20F-25F 26F-31F	RUL6
Desig. Label(NT9X90AA)	P0729127			YY	8F,14F	RUL6
Desig. Label(NT9X90BA)	P0729128			YY	8F,14F	RUL6

Retired Equipment
Application Processor Cabinet

NTZZ35AA
EMC4-04-000
Page 2

Desig. Label(NT9X90AA & NT9X90BA)	P0730171	YY	8F,14F	RUL6
Filler Packfill	NT9X01FB	ZZ		RUL7
Blank Shelf	NT0X24BD	ZZ		RUL7
End of Aisle Lamp Cable	NT9X0146			RUL8
End of Aisle Lamp Cable	NT9X0172			RUL8
Kick Plate Assy (Brown)	NT0X2430			RUL9
Kick Plate Assy (Grey)	NT0X2516			RUL9
SCSI Wiring Configuration	AR			RUL10

NOTES:

- 1) Both planes of each unit are shown together in the equipment list, while the two half-shelves are shown separately.
- 2) XX, YY, and ZZ denote shelf position 00, 13, 26, or 39. XX denotes equipment that can be assigned to an Application Processor Shelf. One Application Processor Shelf is Always Provided in position 39. YY denotes equipment that can be assigned to a Storage Device Shelf. ZZ denotes equipment that can be assigned to any shelf position.
- 3) Maximum four (4) FPs are to be assigned beginning from shelf 39 (top of cabinet) moving downwards, and left to right across each shelf. Allot space for SDs from shelf 00 (bottom of cabinet) moving upwards, and left to right across each shelf. Leave no gaps in the assignment sequence.
- 4) The SCSI bus with the greatest number of devices is to be assigned first, beginning at the bottom of the cabinet, followed by the next largest bus, and so on.
- 5) Space for SDs can only be allotted in 2, 4, 8, or 12 quadrant increments; that is, one half-shelf, one full shelf, two full shelves, or three full shelves (a quadrant is a quarter-shelf space). It is not allowed to form combinations using 2-quadrant increments (eg. 6 = 4 + 2, or 4 = 2 quadrants on one shelf and 2 quadrants on another). As well, SCSI cabling cannot leave the cabinet.

- 6) Within each SD space allotment, Power Converters, SCSI Device Interface Paddleboards, and SCSI cables must be equipped initially. The Storage Devices themselves can be provisioned in a future extension. Any type of SD may be provisioned in an allotted quadrant, or a quadrant may be left unequipped. However, it is recommended to position the two members of a shadowed pair side by side within a half shelf.
- 7) It is permitted to leave shelf positions unequipped initially. In an extension, Application Processor and Storage Device Shelves can be added in the field in place of the initial Blank Shelf filler.
- 8) Disk storage devices are more sensitive to vibration than DAT storage devices. Where possible, disk drives should be located lower in the cabinet than DAT drives.
- 9) After the FPs and SDs are assigned per the above notes, APs may be assigned to AP shelves into the remaining half-shelf spaces. It is possible to fill a cabinet with APs alone, should an application require it.

RULES:

AP 1) When PEC NTZZ35AA is ordered, these items are provided.

2) The NT9X0101 is comprised of the following:

- NT0X24AA Cabinet Framework
- NT9X03AA Frame Supervisory Panel
- A0323984 Core Cooling Unit
- Cabinet Common Cabling & FSP Cabling

The NT0X24AA framework provides earthquake and EMI protection. The framework is 72" high, 28" deep and 42" wide. The NT9X03AA FSP is mounted at position 52.

The A0323984 Cooling Unit is located immediately below position 0.

AP-XXX 1) This PEC is always provided on the NT9X80BA and is indicated here for completeness.

RUL1 1) Provide one (1) NT9X8101 Application Processor Shelf when this shelf position is to contain Application Processors (APs) or File Processors (FPs).

- RUL2 1) Provision the circuit pack quantities indicated to equip one half-shelf to provide a dual-plane AP or FP:

PEC	Quantity per half-shelf
-----	-----
NTDX15AA	2
NT9X86AA	2
NT9X13LA	2
NT9X21AB	2
NT9X62AA	2

- RUL3 1) Provision NT9X14DB 24 MByte Memory CP as required by the application. The application may designate one of the memory CPs as a hot spare; this is optional. Note that with the NT9X14DB, the first 4 MByte of data store is unusable.
- 2) In an Application Processor, a maximum of four (4) 24 MByte Memory CP may be equipped per plane (total eight (8) per AP) for a total of 92 MBytes of memory per plane. (96 - 4 = 92 MBytes) In a File Processor, a maximum of three (3) 24 MByte Memory CP may be equipped per plane (total six (6) per FP) for a total of 68 MBytes of memory per plane. (72 - 4 = 68 MBytes) In a FP, slots 8F-10F and 19F-17F, or 20F-22F and 31F-29F, are available for memory CP.
- 3) Assign memory CP beginning with the CP position farthest from the CPU CP and working towards the CPU. For the left half-shelf the sequence is 8F and 19F, 9F and 18F, 10F and 17F, (and 11F and 16F if the unit is an AP). For the right half shelf the sequence is 20F and 31F, 21F and 30F, 22F and 29F, (and 23F and 28F if the unit is an AP).
- RUL4 1) Provision NT9X26AB if that vintage is equipped in the DMS-Core. New core installations should be provisioned with NT9X26AB.
- RUL5 1) Provide one (1) NT9X8301 Storage Device Shelf when this shelf position is to contain Storage Devices (SDs).
- RUL6 1) Provide one (1) NT9X90AA 600 MByte Disk Storage Device per quadrant when the application requires a hard disk drive.
- 2) Provide one (1) NT9X90BA 1.3 GByte DAT Storage Device per quadrant when the application requires a Digital Audio Tape storage device. Provision DG60M Magnetic Tape Data Cartridge (blank) as required.
- 3) Provide six (6) NT9X19AA Filler Face Plates for each allocated quadrant not equipped with with an SD.

- 4) When equipping one half SD(storage device) shelf with a combination of one Disk(NT9X90AA) and one DATs(NT9X90BA) then provide one (1) P0730171 Label.
 - 5) When equipping one half SD(storage device) shelf with one or two Disk(NT9X90AA) then provide one (1) P0729127 Label.
 - 6) When equipping one half SD(storage device) shelf with one or two DATs(NT9X90BA) then provide one (1) P0729128 Label.
- RUL7
- 1) When a provided shelf is not equipped with APs, FPs or SDs, provide one (1) NT9X01FB Filler Packfill to satisfy the forced air cooling requirements of the frame.
 - 2) When a shelf is not equipped, provide one (1) NT0X24BD Blank Shelf to satisfy the forced air cooling requirements of the frame.
- RUL8
- 1) Provide one (1) End of Aisle Lamp cable assembly (NT9X0146) if this is the last cabinet in the line-up.
 - 2) Provide one (1) End of Aisle Lamp cable assembly (NT9X0172) if the spares cabinet (NT9X01FA) is located between the NT9X80BA and the end of the line-up.
- RUL9
- 1) Provision one (1) NT0X2430 Kick Plate Assembly when other exterior cabinet mechanical hardware is brown-coloured. Provision one (1) NT0X2516 Kick Plate Assembly when other exterior cabinet mechanical hardware is grey-coloured. Refer to the Engineering Manual Section EMA4-04-000 for doors, trim, and other provisionable mechanical hardware for the cabinet.
- RUL10
- 1) SCSI cables are provided based on the physical length from the FP to the SD, and between SDs in the chain. Each diagram in the table below depicts a cabinet configuration, with shelves 39, 26, 13 and 00 shown from top to bottom. "FP" represents a File Processor, "SD" a space allotted for a Storage Device, and "-" a blank space or Application Processor. The digit following FP or SD indicates which SCSI bus the device belongs to (eg. SD0 is a space allocated to a Storage Device on SCSI bus 0. It is connected to all other SD0 devices and FP0.)

Select the configuration with the desired quantity of FPs and SD spaces, and provision the quantity of cable PECs indicated.

Table 1 - SCSI Cable Provisioning

QTY OF FPs	CABINET CONFIGURATION	CABLE LENGTH (INCHES)	QTY	PEC												
1	<table><tr><td>FP0</td><td>-</td></tr><tr><td>SD0</td><td>SD0</td></tr><tr><td>SD0</td><td>SD0</td></tr><tr><td>SD0</td><td>SD0</td></tr><tr><td>SD0</td><td>SD0</td></tr></table>	FP0	-	SD0	SD0	SD0	SD0	SD0	SD0	SD0	SD0	55	3	NT9X0443		
		FP0	-													
		SD0	SD0													
		SD0	SD0													
		SD0	SD0													
SD0	SD0															
60	4	NT9X0444														
65	3	NT9X0445														
70	5	NT9X0446														
75	1	NT9X0447														
1	<table><tr><td>FP0</td><td>-</td></tr><tr><td>-</td><td>-</td></tr><tr><td>SD0</td><td>SD0</td></tr><tr><td>SD0</td><td>SD0</td></tr><tr><td>SD0</td><td>SD0</td></tr><tr><td>SD0</td><td>SD0</td></tr></table>	FP0	-	-	-	SD0	SD0	SD0	SD0	SD0	SD0	SD0	SD0	55	1	NT9X0443
		FP0	-													
		-	-													
		SD0	SD0													
		SD0	SD0													
		SD0	SD0													
SD0	SD0															
60	1	NT9X0444														
65	2	NT9X0445														
70	3	NT9X0446														
75	4	NT9X0447														
80	1	NT9X0448														

Table 1 - SCSI Cable Provisioning (continued)

QTY OF FPs	CABINET CONFIGURATION	CABLE LENGTH (INCHES)	QTY	PEC
1	FP0 -	65	1	NT9X0445
		70	2	NT9X0446
	- -	75	1	NT9X0447
		80	1	NT9X0448
	- -	85	3	NT9X0449
	SD0 SD0			
1	FP0 -	60	1	NT9X0444
		65	3	NT9X0445
	- -	70	2	NT9X0446
		75	1	NT9X0447
	- -	80	1	NT9X0448
	SD0 -			
2	FP0 FP1	45	1	NT9X0420
		50	3	NT9X0442
		55	4	NT9X0443
	SD1 SD1	60	2	NT9X0444
		65	2	NT9X0445
	SD0 SD0	70	3	NT9X0446
		75	4	NT9X0447
	SD0 SD0	80	1	NT9X0448
2	FP0 FP1	45	1	NT9X0420
		50	3	NT9X0442
		55	3	NT9X0443
	SD1 -	60	2	NT9X0444
		65	3	NT9X0445
	SD0 SD0	70	3	NT9X0446
		75	4	NT9X0447
	SD0 SD0	80	1	NT9X0448

Table 1 - SCSI Cable Provisioning (continued)

QTY OF FPs	CABINET CONFIGURATION	CABLE LENGTH (INCHES)	QTY	PEC								
2	<table><tr><td>FP0</td><td>FP1</td></tr><tr><td>-</td><td>-</td></tr><tr><td>SD1</td><td>SD1</td></tr><tr><td>SD0</td><td>SD0</td></tr></table>	FP0	FP1	-	-	SD1	SD1	SD0	SD0	55	1	NT9X0443
		FP0	FP1									
		-	-									
		SD1	SD1									
		SD0	SD0									
		60	1	NT9X0444								
		65	5	NT9X0445								
70	3	NT9X0446										
75	2	NT9X0447										
2	<table><tr><td>FP0</td><td>FP1</td></tr><tr><td>-</td><td>-</td></tr><tr><td>SD1</td><td>-</td></tr><tr><td>SD0</td><td>SD0</td></tr></table>	FP0	FP1	-	-	SD1	-	SD0	SD0	80	1	NT9X0448
		FP0	FP1									
		-	-									
		SD1	-									
		SD0	SD0									
		85	3	NT9X0449								
		2	<table><tr><td>FP0</td><td>FP1</td></tr><tr><td>-</td><td>-</td></tr><tr><td>-</td><td>-</td></tr><tr><td>SD0</td><td>SD1</td></tr></table>	FP0	FP1	-	-	-	-	SD0	SD1	60
FP0	FP1											
-	-											
-	-											
SD0	SD1											
65	4			NT9X0445								
70	2			NT9X0446								
75	5	NT9X0447										
3	<table><tr><td>FP0</td><td>FP1</td></tr><tr><td>FP2</td><td>-</td></tr><tr><td>SD1</td><td>SD2</td></tr><tr><td>SD0</td><td>SD0</td></tr></table>	FP0	FP1	FP2	-	SD1	SD2	SD0	SD0	80	3	NT9X0448
		FP0	FP1									
		FP2	-									
		SD1	SD2									
		SD0	SD0									
		85	1	NT9X0449								
		50	1	NT9X0442								
55	3	NT9X0443										
60	4	NT9X0444										
65	5	NT9X0445										
70	5	NT9X0446										
75	2	NT9X0447										

Table 1 - SCSI Cable Provisioning (continued)

QTY OF FPs	CABINET CONFIGURATION	CABLE LENGTH (INCHES)	QTY	PEC
3	FP0 FP1	35	1	NT9X0416
		40	3	NT9X0419
	FP2 -	45	2	NT9X0420
		50	1	NT9X0442
	SD2 -	55	1	NT9X0443
		60	1	NT9X0444
	SD0 SD1	65	5	NT9X0445
		70	2	NT9X0446
		75	5	NT9X0447
		80	2	NT9X0448
4	FP0 FP1	85	1	NT9X0449
		35	1	NT9X0416
	FP2 FP3	40	4	NT9X0419
		45	5	NT9X0420
	SD2 SD3	50	4	NT9X0442
		55	1	NT9X0443
	SD0 SD1	60	2	NT9X0444
		65	4	NT9X0445
	SD0 SD1	70	2	NT9X0446
		75	5	NT9X0447
		80	3	NT9X0448
	SD0 SD1	85	1	NT9X0449

RUL11 1) Provide one NTEX5001 Power Terminal Block Kit when overhead power cable routing is used.

RUL12 1) Provision the circuit pack quantities indicated to equip one half-shelf to provide capacity for Storage Devices.

PEC	Quantity per half-shelf
NT9X91AA	2
NT9X19AA	1
NT9X19BA	9
NT9X89AA	4

RUL13 1) Provision the circuit pack quantities indicated to equip one full shelf to provide capacity for Storage Devices.

PEC	Quantity per full-shelf
NT9X91AA	4

NT9X19AA	2
NT9X19BA	18
NT9X89AA	8

- RUL14 1) Provision the circuit pack quantities indicated to equip one right half application processor shelf with Filler Packs.

PEC	Quantity per half-shelf
NT9X19CA	2
NT9X19AA	6
NT9X19BA	7
NT9X0314	2

- RUL15 1) Provision the circuit pack quantities indicated to equip the right half storage device shelf with Filler Packs.

PEC	Quantity per half-shelf
NT9X19AA	13

- RUL16 1) Provision the circuit pack quantities indicated to equip the right half storage device shelf with Filler Packs. An additional four (4) more face plates(NT9X19BA) are included since paddleboards are not on the shelf.

PEC	Quantity per half-shelf
NT9X19AA	13
NT9X19BA	13
NT9X19CA	2
NT9X0314	2

- RUL17 1) Provision one (1) NT9X0314 Terminator FSP Plug at the FSP for each NT9X19CA equipped.

STREAMLINE SUPERNODE CABINET AND COMMON CP

PEC CODE: NTZZ01TA

| RATING: MD

| ABBREVIATION NAME: DPCC

ENGINEERING DESCRIPTION: The Streamline SuperNode Cabinet and Common CP contains the shelf assemblies, bulkheads, circuit packs and miscellaneous items that are always required for a Streamline SuperNode. This PEC will be MD in WEEK 92/26 when NTZZ01RA replaces it.

REFERENCE DOCUMENTATION: SLZZ01TA 00 04
NTZZ01TA REL 04

MARKETS: Applicable markets:

Canada

NTZZ01TA EMC4-05-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 92 11 18	----- ECM 626 06	Previous history not available This section has a rating A&M

The Streamline Supernode Cabinet and Common CP is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Dual Plane Com Core Cab	NT9X01JA		1			AP
Frame Fail Light Kit (Grey)	NT0X24CN		1			AP
Kick Plate Assy (Grey)	NT0X2516		1			AP
Rear Kick Plate Assy (Grey)	NT0X24CU		1			AP
Overhead Power Block Kit	NTEX5001		1			RUL8
Dual FSP Connector Pnl. Assy	NTEX5017		1	52		AP
Dual FSP Bulkhead Pnl. Assy	NTEX5018		1	52		AP
FSP Bulking Cable Assy	NT9X0522		2	52		AP
MSG SW SIMPLEX SELF ASSY	NT9X0440	MS	2	26, 39		AP-01
Msg Sw Proc Comm CP	NT9X04AH		2	26, 39		AP
-5V 20A CONVERTER	NT9X31AA		4	26, 39	1F, 33F	AP-02
+5V 80A CONVERTER	NT9X30AA		4	26, 39	4F, 36F	AP-02
MS T-BUS TERMINATOR CP	NT9X52AA		2	26, 39	7F	AP-02
Combined Clock CP	NT9X53AC		2	26, 39	8F	AP
CPU 16 MHZ CP	NT9X13DC		2	26, 39	9F	AP
6 MB Memory CP	NT9X14BB		2	26, 39	10F	AP
MAPPER CP	NT9X15AA		2	26, 39	11F	AP-02
Streamline 4 Port Network & IOC I/F	NTZZ01UA			26	28F, 26F 24F, 22F 20F, 18F 16F, 14F 12F	RUL4
Streamline 4 Port LIM/LPP Interface	NTZZ01VA			26	26F, 24F 22F, 20F 18F, 16F 14F, 12F	RUL4
Initial ENET I/F	NTZZ01NA			26	27F-12F	RUL4
Intermediate ENET I/F	NTZZ01PA			26	26F-13F	RUL4
Final ENET I/F	NTZZ01QA			26	27F-13F	RUL4
Link Interface For FLIS	NTZZ01ZA			26, 39	12F-27F	RUL7
I/F Filler Face Plate	NTZZ01EA			26	12F-29F	RUL5
MS 4-PORT CP	NT9X17AA		4	26, 39	30F, 31F	AP-02
MS P-Bus Terminator CP	NT9X49CB		2	26, 39	32F	AP
MS LOADING PADDLE BOARD	NT9X32AA		4	26, 39	7R, 10R	AP-02
Subsystem Clock PB (Ext I/F)	NT9X54AC		2	26, 39	8R	AP
Remote Term I/F Curr Loop	NT9X26AB		2	26, 39	9R	AP
PB FILLER FACE PLATE	NT9X19BA		4	26, 39	11R, 32R	AP-02
DS-512 PB	NT9X20AA		4	26, 39	30R-31R	AP-02
SHELF CP FILL FRONT LABEL	P0698334		2	26, 39		AP-02
SHELF CP FILL REAR LABEL	P0690632		2	26, 39		AP-02
DS30 Blkhd I/F (left) (DMS)	NT9X6546		2	26, 39		AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
DS30 Blkhd I/F (rt) (DMS)	NT9X6545		2	26,39		AP
Coax Ca Assy (NT9X54AC/AD)	NT9X0192		4	26,39		AP
Composite Clk CA Assy	NT9X0175		2	26,39		AP
Inter-MS DS-30 Cable Assy	NTEX5023			26,39		RUL12
Fiber Optic Cable	A0352268			26,39		RUL13
Warning Label'Lazer Warning'	P0645993			13,26		RUL14
COMP MOD DUPLEX SH ASSY	NT9X0605	CM	1	13		AP-01
Comp Mod Duplex Comm CP	NT9X06AD		1	13		AP
-5V 20A POWER CONV.	NT9X31AA		2	13	1F,33F	AP-03
+5V 80A POWER CONV.	NT9X30AA		2	13	4F,36F	AP-03
6MB Memory	NTZZ01KA			13	16F-7F	RUL2
24MB Memory	NTZZ01LA			13	16F-7F	RUL2
Filler Face Plate	NTZZ01MA			13	16F-7F	RUL3
CPU Port CP	NT9X12AC		4	13	17F-18F 21F-22F	AP
CPU Processor CP	NT9X13BA			13	19F	RUL6
CPU Processor CP	NT9X13BB			13	19F	RUL6
Supernode Series 10 CPU CP	NTZZ01FA			13	19F	RUL6
Supernode Series 20 CPU CP	NTZZ01GA			13	19F	RUL6
Supernode Series 30 CPU CP	NTZZ01HA			13	19F	RUL6
Supernode Series 40 CPU CP	NTZZ01JA			13	19F	RUL6
Supernode BRISC CPU	NTZZ01SA			13	19F	RUL6
CM BUS TERMINATOR	NT9X21AA		2	13	7R,32R	AP-03
Filler Face Plate	NT9X19BA			13	8R,31R	RUL1
PB Filler Face Plate	NT9X19BA		14	13	9R-15R 24R-30R	AP
SUBSYSTEM CLOCK	NT9X22CA		2	13	16R,23R	AP-03
DS512 PB	NT9X20AA		4	13	17R-18R 21R-22R	AP-03
SHELF CP FILL FRONT LABEL	P0700719		1	13		AP-03
SHELF CP FILL REAR LABEL	P0678438		1	13		AP-03
Cable Bulkhead (right)	NT9X6539		1	13		AP
Cable Bulkhead (left)	NT9X6540		1	13		AP
RS232C & Curr Loop Ca Assy	NT9X0196		2	13		AP
CM SLM EXT SHELF ASSY	NT9X0702	SLM	1	00		AP-01
SLM Common Module	NTZZ01BA			00		RUL1
Filler Packfill	NT9X01FB			00		RUL1
System Load Module II	NT9X44AB			00	8F,24F	RUL1
Des Label (NT9X13DC)	P0696240		2	26,39	9F	AP
Des Label (NT9X14BB)	P0689619		2	26,39	10F	AP
Des Label (NT9X26AB)	P0705003		2	26,39	9R,	AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Des Label (NT9X53AC)	P0726965		2	26, 39	8F	AP
Des Label (NT9X54AC)	P0705005		2	26, 39	8R	AP
Des Label (NT9X12AC)	P0727356		4	13	17F, 18F 21F, 22F	AP
Des Label (NT9X49CB)	P0697532		2	26, 39	32F	AP
Warning Label, English ONLY "High Voltage"	P0675711		1			RUL9
Warning Label, English/French "High Voltage/Haute Tension"	P0689137		1			RUL9
Warning Label, English ONLY "High Voltage"	P0675712		4			RUL10
Warning Label, English/French "High Voltage/Haute Tension"	P0689138		4			RUL10
Warning Label, English ONLY "Disconnect Fan"	P0675710		1			RUL11
Warning Label, English/French "Disconnect Fan/"	P0689136		1			RUL11

FLAGS:

NOTES:

RULES:

- AP 1) When PEC NTZZ01TA is ordered, these items are provided.
- AP-01 1) This pec ia always provided on the NT9X01JA cabinat, and is indicated here for completeness.
- AP-02 1) This pec is always provided on the NT9X04AH MS common cp, and is indicated here for completeness.
- AP-03 1) This pec is always provided on tha NT9X06AD CM common cp, and is indicated here for completeness.
- RUL1 1) When the System Load Module (SLM) is a requirement, provide one (1) NTZZ01BA SLM Common fill and two (2) NT9X44AB SLM II units.

- 2) When the SLM is not a requirement, provide one (1) Filler Packfill NT9X01FB at shelf position 00, and two (2) Filler Face Plates, NT9X19BA, in shelf position 13 for card slots 8R, 31R to satisfy the forced air cooling requirements of the frame.
- RUL2 1) Provision one (1) 24Mb Memory Circuit Packs, NTZZ01LA, for each 24Mb increment of memory required. A reminder that in addition to the operational memory provisioned, one extra memory CP must be provided per plane to be assigned as a reliability spare. The NTZZ01KA 6 MByte CP will be provisioned for STP offices only.
- 2) All offices must equip the Memory CP to the following algorithm: Starting with 24 MByte CP for mixed offices, Slot 16F, 15F, 14F, 13F, 12F, 11F, 10F, 09F, 08F, 07F
- RUL3 1) Provision one (1) NTZZ01MA, Filler Face Plate in card slots (16F-07F) per the algorithm in RUL2, not equipped with a memory circuit pack.
- RUL4 1) Provide up to five (5) NTZZ01UA to interface Network and IOC per the following formula:

$$\# \text{ NTZZ01UA} = \frac{(\# \text{NM} + \# \text{IOC})}{8}$$

rounded up to the next integer. 'NM' is a single plane.

IOC:00 and IOC:01 have fixed assignments to MS CP position 29 port 0 and MS CP position 28 port 0 respectively. In addition it is recommended that port assignments proceed from higher number slots toward lower number slots. Each NTZZ01UA contains circuit packs and paddle boards for two (2) consecutive card slots on shelves 26 and 39. Assign NTZZ01UA in the following order; Slots 28, 26, 24, 22, 20 (Applications needing additional ports will require ENET)

- 2) Provide up to four (4) NTZZ01VA to interface the LIM/LPP per the following formula:

$$\# \text{ NTZZ01VA} = \{ \# \text{ Link Interface Module Cabinets} / 2 \}$$

to be rounded up to the nearest multiple of 2.

It is recommended that port assignments proceed from higher number slots toward lower number slots. One (1) NTZZ01TA is required for STP applications to interface Network & IOC Modules. Each NTZZ01VA contains circuit packs and paddle

boards for two (2) consecutive card slots on shelves 26 and 39. Assign NTZZ01VA in the following order; Slots 26, 24, 22, 20 (Applications needing additional ports will require ENET)

- 3) NT9X6544 cables are assigned from the NT9X23__ PBs to the DS_30 Bulkheads per the following:

CONNECT	FROM			TO	
CONNECTOR DESIGNATION	CARD SLOT	PORT	CONN	CONN DESIG	BULKHEAD DESIGNATION
(P2) ON NT9X23-- (DS30 4 PORT) CIRCUIT PACK	20R	0	P0	A0	DS30 BULKHEAD INTERFACE (RIGHT) REFERENCE NT9X6545
	20R	1	P1	A1	
	20R	2	P2	A2	
	20R	3	P3	A3	
	21R	0	P0	B0	
	21R	1	P1	B1	
	21R	2	P2	B2	
	21R	3	P3	B3	
	22R	0	P0	C0	
	22R	1	P1	C1	
	22R	2	P2	C2	
	22R	3	P3	C3	
	23R	0	P0	D0	
	23R	1	P1	D1	
	23R	2	P2	D2	
	23R	3	P3	D3	
	24R	0	P0	E0	
	24R	1	P1	E1	
	24R	2	P2	E2	
	24R	3	P3	E3	
	25R	0	P0	E0	DS30 BULKHEAD INTERFACE (LEFT) REFERENCE NT9X6546
	25R	1	P1	E1	
	25R	2	P2	E2	
	25R	3	P3	E3	
	26R	0	P0	D0	
	26R	1	P1	D1	
	26R	2	P2	D2	
	26R	3	P3	D3	
	27R	0	P0	C0	
	27R	1	P1	C1	
	27R	2	P2	C2	
	27R	3	P3	C3	
	28R	0	P0	B0	
	28R	1	P1	B1	
	28R	2	P2	B2	
	28R	3	P3	B3	
	29R	0	P0	A0	
	29R	1	P1	A1	
	29R	2	P2	A2	
	29R	3	P3	A3	

- 4) Provide up to eight (8) NTZZ01NA, Initial ENET Interface, for the first 64 Messaging Ports on each Port Group (on each ENET shelf). Each NTZZ01NA contains circuit packs and paddle boards for one (1) card slot on shelves 26 and 39. Assign NTZZ01NA in the following order; Slots 12,13,14,...25,26,27. It is recommended that port assignments proceed from lower number slots toward higher number slots.
 - 5) Provide up to 12 NTZZ01PA, Intermediate ENET Interface, if the port group exceeds 128 Messaging Ports (on each ENET shelf). Each NT9X25AA MS Port Expander PB extends the port group in multiples of 64 ports each. Each NTZZ01PA contains circuit packs and paddle boards for one (1) card slot on shelves 26 and 39. Assign NTZZ01PA in the following order; 13,14,15,...24,25,26. It is recommended that port assignments proceed from lower number slots toward higher number slots.
 - 6) Provide up to eight (8) NTZZ01QA, Final ENET Interface, for the final 64 Messaging Ports on each Port Group (on each ENET shelf). Each NTZZ01QA contains circuit packs and paddle boards for one (1) card slot on shelves 26 and 39. Assign NTZZ01QA in the following order; 13,14,15,...25,26,27. It is recommended that port assignments proceed from lower number slots toward higher number slots.
- RUL5 1) Provide one (1) NTZZ01EA for card slots 12 through 29 (Front and Rear) not equipped with NTZZ01CA, NTZZ01DA, NTZZ01NA, NTZZ01PA, NTZZ01QA, or NTZZ01ZA. Each NTZZ01EA contains circuit packs and paddle boards for one (1) card slot on shelves 26 and 39. NTZZ01EA can be assigned in card slots from 12 thru 29.
- RUL6 1) Provide one (1) NTZZ01FA CPU CP (for equipping card slots 19F and 20F) for each SuperNode Series 10 office.
- 2) Provide one (1) NTZZ01GA CPU CP (for equipping card slots 19F and 20F) for each SuperNode Series 20 or STP office. The NT9X13BA and NT9X13BB CPU CP are to be replaced by the NTZZ01GA CPU CP at BCS 26.
- 3) Provide one (1) NTZZ01HA CPU CP (for equipping card slots 19F and 20F) for each SuperNode Series 30 office.
- 4) Provide one (1) NTZZ01JA CPU CP (for card slots 19F and 20F) for each SuperNode Series 40 office.

- 5) Provide one (1) NTZZ01SA BRISC CPU CP (for card slots 19F and 20F). Minimum software release that is required is BCS-BR33.
 - 6) When UPGRADING from one CPU to another only order the CPU, not the Building Block as this comes with additional NT9X26ABs.
- RUL7 1) Provide one (1) NTZZ01ZA (Link Interface to FLIS) to interface to a FLIS in a Enhanced Multi-Purpose Cabinet.
- RUL8 1) Provide one (1) NTEX5001 Overhead Power Block Kit for overhead cabling of the Supernode Frame.
- RUL9 1) Provide one (1) P0675711 or P0689137 Label to be applied to Supernode FSP Unit.
- RUL10) Provide four (4) P0675712 or P0689138 Labels per cabinet.
- RUL11 1) Provide one (1) P0675710 or P0689136 Label to be applied to the front of the cabinet below the blowers.
- RUL12 1) Provide NTEX5023 Cable for Inter-MS link option when interfacing with fiber link interface shelf(FLIS) for connection between MS 0 and MS 1 when copper connection is required for DS-30 paddleboards.
- RUL13 1) Provide A0352268 Cable for Inter-MS link option when interfacing with fiber link interface shelf(FLIS) for connection between MS 0 and MS 1 when fiber optic connection is required for DS-512 paddleboards.
- RUL14 1) Provide two (2) P0645993 Lazer Radiation Warning Labels when adding paddleboard that required fiber optic connections. (ie. NT9X20xx etc.)
- 2) Provide two (2) P0645993 Lazer Radiation Warning labels according to customer safety regulations that indicate that labels must be affixed to SuperNode cabinets provisioned with fiber optic cables.

SUPERNODE CABINET AND COMMON CP(USA)

PEC CODE: NTZZ97BA

| RATING: MD

| ABBREVIATION NAME: DPCC

ENGINEERING DESCRIPTION: The System Node Cabinet and Common CP contains the shelf assemblies, bulkheads, circuit packs and miscellaneous items that are always required for a SuperNode. This Building Block is applicable only to the USA. This PEC will be MD in WEEK 92/26 when NTZZ01RA replaces it.

REFERENCE DOCUMENTATION: SLZZ97BA 00 02
NTZZ97BA REL 02

MARKETS: Applicable markets:

US

NTZZ97BA EMC4-05-001 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 92 11 18	----- ECM 626 06	Previous history not available This section has a rating A&M

The SUPERNODE CABINET AND COMMON CP(USA) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Dual Plane Com Core Cab	NT9X01JA		1			AP
Kick Plate Assy (Brown)	NT0X2430		1			AP
Overhead Power Block Kit	NTEX5001		1			RUL8
Dual FSP Connector Pnl. Assy	NTEX5017		1	52		AP
Dual FSP Bulkhead Pnl. Assy	NTEX5018		1	52		AP
FSP Bulking Cable Assy	NT9X0522		2	52		AP
Frame Fail Light Kit(BROWN)	NT0X24BT		1			AP
MSG SW SIMPLEX SELF ASSY	NT9X0440	MS	2	26, 39		AP-01
Msg Sw Proc Comm CP	NT9X04AH		2	26, 39		AP
-5V 20A CONVERTER	NT9X31AA		4	26, 39	1F, 33F	AP-02
+5V 80A CONVERTER	NT9X30AA		4	26, 39	4F, 36F	AP-02
MS T-BUS TERMINATOR CP	NT9X52AA		2	26, 39	7F	AP-02
MS Ext System Clock I/F CP	NT9X53AB		2	26, 39	8F	AP
CPU 16 MHZ CP	NT9X13DC		2	26, 39	9F	AP
6 MB Memory CP	NT9X14BB		2	26, 39	10F	AP
MAPPER CP	NT9X15AA		2	26, 39	11F	AP-02
4 Port Network & IOC I/F	NTZZ01CA			26	28F, 26F	RUL4
					24F, 22F	
					20F, 18F	
					16F, 14F	
					12F	
4 Port LIM/LPP Interface	NTZZ01DA			26	26F, 24F	RUL4
					22F, 20F	
					18F, 16F	
					14F, 12F	
Initial ENET I/F	NTZZ01NA			26	27F-12F	RUL4
Intermediate ENET I/F	NTZZ01PA			26	26F-13F	RUL4
Final ENET I/F	NTZZ01QA			26	27F-13F	RUL4
Link Interface For FLIS	NTZZ01ZA			26, 39		RUL7
I/F Filler Face Plate	NTZZ01EA			26	12F-29F	RUL5
MS 4-PORT CP	NT9X17AA		4	26, 39	30F, 31F	AP-02
MS P-Bus Terminator CP	NT9X49CB		2	26, 39	32F	AP
MS LOADING PADDLE BOARD	NT9X32AA		4	26, 39	7R, 10R	AP-02
Subsystem Clock PB (Ext I/F)	NT9X54AC		2	26, 39	8R	AP
Remote Term I/F Curr Loop	NT9X26AB		2	26, 39	9R	AP
Desig. Label(NT9X26AB)	P0705003		2	26, 39	9R	AP
PB FILLER FACE PLATE	NT9X19BA		4	26, 39	11R, 32R	AP-02
DS-512 PB	NT9X20AA		4	26, 39	30R-31R	AP-02
SHELF CP FILL FRONT LABEL	P0698334		2	26, 39		AP-02
SHELF CP FILL REAR LABEL	P0690632		2	26, 39		AP-02
MS Blkhd I/F	NT9X6556		2	26, 39		AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
DS30 Blkhd I/F (rt) (DMS)	NT9X6536		2	26,39		AP
Coax Ca Assy (NT9X54AC/AD)	NT9X0192		4	26,39		AP
Composite Clk CA Assy	NT9X0175		2	26,39		AP
Inter-MS DS-30 Cable Assy	NTEX5022			26,39		RUL10
Fiber Optic Cable	A0352268			26,39		RUL11
Warning Label'Lazer Warning'	P0645993			13,26		RUL12
COMP MOD DUPLEX SH ASSY	NT9X0605	CM	1	13		AP-01
Comp Mod Duplex Comm CP	NT9X06AD		1	13		AP
-5V 20A POWER CONV.	NT9X31AA		2	13	1F,33F	AP-03
+5V 80A POWER CONV.	NT9X30AA		2	13	4F,36F	AP-03
6MB Memory	NTZZ01KA			13	16F-7F	RUL2
24MB Memory	NTZZ01LA			13	16F-7F	RUL2
Filler Face Plate	NTZZ01MA			13	16F-7F	RUL3
CPU Port CP	NT9X12AB		4	13	17F-18F 21F-22F	AP
CPU Processor CP	NT9X13BA			13	19F	RUL6
CPU Processor CP	NT9X13BB			13	19F	RUL6
Supernode Series 10 CPU CP	NTZZ01FA			13	19F	RUL6
Supernode Series 20 CPU CP	NTZZ01GA			13	19F	RUL6
Supernode Series 30 CPU CP	NTZZ01HA			13	19F	RUL6
Supernode Series 40 CPU CP	NTZZ01JA			13	19F	RUL6
Supernode BRISC CPU	NTZZ01SA			13	19F	RUL6
CM BUS TERMINATOR	NT9X21AA		2	13	7R,32R	AP-03
Filler Face Plate	NT9X19BA			13	8R,31R	RUL1
PB Filler Face Plate	NT9X19BA		14	13	9R-15R 24R-30R	AP
SUBSYSTEM CLOCK	NT9X22CA		2	13	16R,23R	AP-03
DS512 PB	NT9X20AA		4	13	17R-18R 21R-22R	AP-03
SHELF CP FILL FRONT LABEL	P0700719		1	13		AP-03
SHELF CP FILL REAR LABEL	P0678438		1	13		AP-03
Cable Bulkhead (right)	NT9X6539		1	13		AP
Cable Bulkhead (left)	NT9X6540		1	13		AP
RS232C & Curr Loop Ca Assy	NT9X0196		2	13		AP
CM SLM EXT SHELF ASSY	NT9X0702	SLM	1	00		AP-01
SLM Common Module	NTZZ01BA			00		RUL1
Filler Packfill	NT9X01FB			00		RUL1
System Load Module II	NT9X44AB			00	8F,24F	RUL1
Des Label (NT9X13DC)	P0696240		2	26,39	9F	AP
Des Label (NT9X14BB)	P0689619		2	26,39	10F	AP
Des Label (NT9X53AB)	P0705004		2	26,39	8F	AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Des Label (NT9X54AC)	P0705005		2	26, 39	8R	AP
Des Label (NT9X12AB)	P0700801		4	13	17F, 18F 21F, 22F	AP
Des Label (NT9X49CB)	P0697532		2	26, 39	32F	AP
Warning Label, English ONLY "High Voltage"	P0675711		1			AP
Warning Label, English ONLY "High Voltage"	P0675712		4			AP
Warning Label, English ONLY "Disconnect Fan"	P0675710					RUL9

FLAGS:

NOTES:

RULES:

- AP 1) When PEC NTZZ97BA is ordered, these items are provided.
- AP-01 1) THIS PEC IS ALWAYS PROVIDED ON THE NT9X01JA CABINET, AND IS indicated here for completeness.
- AP-02 1) THIS PEC IS ALWAYS PROVIDED ON THE NT9X04AH MS COMMON CP, and is indicated here for completeness.
- AP-03 1) THIS PEC IS ALWAYS PROVIDED ON THE NT9X06AD CM COMMON CP, and is indicated here for completeness.
- RUL1 1) When the System Load Module (SLM) is a requirement, provide one (1) NTZZ01BA SLM Common fill and two (2) NT9X44AB SLM II units.
- 2) When the SLM is not a requirement, provide one (1) Filler Packfill NT9X01FB at shelf position 00, and two (2) Filler Face Plates, NT9X19BA, in shelf position 13 for card slots 8R, 31R to satisfy the forced air cooling requirements of the frame.

RUL2 1) Provision one (1) 24Mb Memory Circuit Packs, NTZZ01LA, for each 24Mb increment of memory required. A reminder that in addition to the operational memory provisioned, one extra memory CP must be provided per plane to be assigned as a reliability spare. The NTZZ01KA 6 MByte CP will be provisioned for STP offices only.

2) All offices must equip the Memory CP to the following algorithm: Starting with 24 MByte CP for mixed offices, Slot 16F,15F,14F,13F,12F,11F,10F,09F,08F,07F

RUL3 1) Provision one (1) NTZZ01MA, Filler Face Plate in card slots (16F-07F) per the algorithm in RUL2, not equipped with a memory circuit pack.

RUL4 1) Provide up to nine (9) NTZZ01CA to interface Network and IOC per the following formula,

$$\# \text{ NTZZ01CA} = \frac{(\# \text{NM} + \# \text{IOC})}{8}$$

rounded up to the next integer. 'NM' is a single plane.

IOC:00 and IOC:01 have fixed assignments to MS CP position 29 port 0 and MS CP position 28 port 0 respectively. In addition it is recommended that port assignments proceed from higher number slots toward lower number slots. Each NTZZ01CA contains circuit packs and paddle boards for two (2) consecutive card slots on shelves 26 and 39. Assign NTZZ01CA in the following order; Slots 28, 26,24,22,20,18,16,14,12

2) Provide up to eight (8) NTZZ01DA to interface the LIM/LPP per the following formula,

$$\# \text{ NTZZ01DA} = \{ \# \text{ Link Interface Module Cabinets} / 2 \}$$

to be rounded up to the newarest multiple of 2.

It is recommended that port assignments proceed from higher number slots toward lower number slots. One (1) NTZZ01CA is required for STP applications to interface Network & IOC Modules. Each NTZZ01DA contains circuit packs and paddle boards for two (2) consecutive card slots on shelves 26 and 39. Assign NTZZ01DA in the following order; Slots 26, 24,22,20,18,16,14,12.

- 3) NT9X0145 cables are assigned from the NT9X23__ PBs to the DS_30 Bulkheads as follows:

FROM CONNECTOR P2 OF NT9X23__ IN PB POSITION	TO	
	CONN DESIG	BULKHEAD DESIGNATION
12R 13R 14R 15R 16R 17R 18R 19R 20R	A B C D E F G H I	DS30 BULKHEAD INTERFACE (RIGHT) NT9X6536
21R 22R 23R 24R 25R 26R 27R 28R 29R	G H I D E F A B C	DS30 BULKHEAD INTERFACE (LEFT) NT9X6556

- 4) Provide up to eight (8) NTZZ01NA, Initial ENET Interface, for the first 64 Messaging Ports on each Port Group (on each ENET shelf). Note that for each ENET shelf one NTZZ01NA must be provisioned. Each NTZZ01NA contains circuit packs and paddle boards for one (1) card slot on shelves 26 and 39. Assign NTZZ01NA in the following order; Slots 12,14,15,...24,25,27. It is recommended that port assignments proceed from lower number slots towards higher number slots.
- 5) Provide up to 12 NTZZ01PA, Intermediate ENET Interface, if the port group exceeds 128 Messaging Ports (on each ENET shelf). Each NT9X25AA MS Port Expander PB extends the port group in multiples of 64 ports each. Each NTZZ01PA contains circuit packs and paddle boards for one (1) card slot on shelves 26 and 39. Assign NTZZ01PA in the following order; 13,14,15,...24,25,26. It is recommended that port as-

signments proceed from lower number slots toward higher number slots.

- 6) Provide up to eight (8) NTZZ01QA, Final ENET Interface, for the final 64 Messaging Ports on each Port Group (on each ENET shelf). Each NTZZ01QA contains circuit packs and paddle boards for one (1) card slot on shelves 26 and 39. Assign NTZZ01QA in the following order; 13,14,15,...25,26,27. It is recommended that port assignments proceed from lower number slots toward higher number slots.
- RUL5 1) Provide one (1) NTZZ01EA for card slots 12 through 29 (Front and Rear) not equipped with NTZZ01CA, NTZZ01DA, NTZZ01NA, NTZZ01PA, NTZZ01QA, or NTZZ01ZA. Each NTZZ01EA contains circuit packs and paddle boards for one (1) card slot on shelves 26 and 39. NTZZ01EA can be assigned in card slots from 12 thru 29.
- RUL6 1) Provide one (1) NTZZ01FA CPU CP (for equipping card slots 19F and 20F) for each SuperNode Series 10 office.
- 2) Provide one (1) NTZZ01GA CPU CP (for equipping card slots 19F and 20F) for each SuperNode Series 20 or STP office. The NT9X13BA and NT9X13BB CPU CP are to be replaced by the NTZZ01GA CPU CP at BCS 26.
 - 3) Provide one (1) NTZZ01HA CPU CP (for equipping card slots 19F and 20F) for each SuperNode Series 30 office.
 - 4) Provide one (1) NTZZ01JA CPU CP (for card slots 19F and 20F) for each SuperNode Series 40 office.
 - 5) Provide one (1) NTZZ01SA BRISC CPU CP (for card slots 19F and 20F). Minimum software release that is required is BCS-BR33.
 - 6) When UPGRADING from one CPU to another only order the CPU, not the Building Block as this comes with additional NT9X26ABs.
- RUL7 1) Provide one (1) NTZZ01ZA (Link Interface to FLIS) to interface to a FLIS in a Enhanced Multi-Purpose Cabinet.
- RUL8 1) Provide one (1) NTEX5001 Overhead Power Block Kit for overhead cabling of the Supernode Frame.
- RUL9 1) Provide one (1) P0675710 to be applied to the front of the cabinet below the blowers.

- RUL10 1) Provide NTEX5022 Cable for Inter-MS link option when interfacing with fiber link interface shelf(FLIS) for connection between MS 0 and MS 1 when copper connection is required for DS-30 paddleboards.
- RUL11 1) Provide A0352268 Cable for Inter-MS link option when interfacing with fiber link interface shelf(FLIS) for connection between MS 0 and MS 1 when fiber optic connection is required for DS-512 paddleboards.
- RUL12 1) Provide two (2) P0645993 Lazer Radiation Warning Labels when adding paddleboard that required fiber optic connections. (ie. NT9X20xx etc.)
- 2) Provide two (2) P0645993 Lazer Radiation Warning labels according to customer safety regulations that indicate that labels must be affixed to SuperNode cabinets provisioned with fiber optic cables.

STREAMLINE SUPERNODE CABINET AND COMMON CP(USA)

PEC CODE: NTZZ97CA

| RATING: MD

| ABBREVIATION NAME: DPCC

ENGINEERING DESCRIPTION: The Streamline SuperNode Cabinet and Common CP contains the shelf assemblies, bulkhead, circuit packs and miscellaneous items that are required for a Streamline SuperNode. This Building Block is applicable to the US Market only. This PEC will be MD in WEEK 92/26 when NTZZ01RA replaces it.

REFERENCE DOCUMENTATION: SLZZ97CA 00 01
NTZZ97CA REL 01

MARKETS: Applicable markets:

US

NTZZ97CA EMC4-05-002 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 92 11 18	----- ECM 626 06	Previous history not available This section has a rating A&M

The STREAMLINE SUPERNODE CABINET AND COMMON CP(USA) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Dual Plane Com Core Cab	NT9X01JA		1			AP
Frame Fail Light Kit (Grey)	NT0X24CN		1			AP
Kick Plate Assy (Grey)	NT0X2516		1			AP
Rear Kick Plate Assy (Grey)	NT0X24CU		1			AP
Overhead Power Block Kit	NTEX5001		1			RUL8
Dual FSP Connector Pnl. Assy	NTEX5017		1	52		AP
Dual FSP Bulkhead Pnl. Assy	NTEX5018		1	52		AP
FSP Bulking Cable Assy	NT9X0522		2	52		AP
MSG SW SIMPLEX SELF ASSY	NT9X0440	MS	2	26,39		AP-01
Msg Sw Proc Comm CP	NT9X04AH		2	26,39		AP
-5V 20A CONVERTER	NT9X31AA		4	26,39	1F,33F	AP-02
+5V 80A CONVERTER	NT9X30AA		4	26,39	4F,36F	AP-02
MS T-BUS TERMINATOR CP	NT9X52AA		2	26,39	7F	AP-02
MS Ext System Clock I/F CP	NT9X53AB		2	26,39	8F	AP
CPU 16 MHZ CP	NT9X13DC		2	26,39	9F	AP
6 MB Memory CP	NT9X14BB		2	26,39	10F	AP
MAPPER CP	NT9X15AA		2	26,39	11F	AP-02
Streamline 4 Port Network & IOC I/F	NTZZ01UA			26	28F,26F 24F,22F 20F,18F 16F,14F 12F	RUL4
Streamline 4 Port LIM/LPP Interface	NTZZ01VA			26	26F,24F 22F,20F 18F,16F 14F,12F	RUL4
Initial ENET I/F	NTZZ01NA			26	27F-12F	RUL4
Intermediate ENET I/F	NTZZ01PA			26	26F-13F	RUL4
Final ENET I/F	NTZZ01QA			26	27F-13F	RUL4
Link Interface For FLIS	NTZZ01ZA			26,39		RUL7
I/F Filler Face Plate	NTZZ01EA			26	12F-29F	RUL5
MS 4-PORT CP	NT9X17AA		4	26,39	30F,31F	AP-02
MS P-Bus Terminator CP	NT9X49CB		2	26,39	32F	AP
MS LOADING PADDLE BOARD	NT9X32AA		4	26,39	7R,10R	AP-02
Subsystem Clock PB (Ext I/F)	NT9X54AC		2	26,39	8R	AP
Remote Term I/F Curr Loop	NT9X26AB		2	26,39	9R	AP
PB FILLER FACE PLATE	NT9X19BA		4	26,39	11R,32R	AP-02
DS-512 PB	NT9X20AA		4	26,39	30R-31R	AP-02
SHELF CP FILL FRONT LABEL	P0698334		2	26,39		AP-02
SHELF CP FILL REAR LABEL	P0690632		2	26,39		AP-02
DS30 Blkhd I/F (left) (DMS)	NT9X6546		2	26,39		AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
DS30 Blkhd I/F (rt) (DMS)	NT9X6545		2	26, 39		AP
Coax Ca Assy (NT9X54AC/AD)	NT9X0192		4	26, 39		AP
Composite Clk CA Assy	NT9X0175		2	26, 39		AP
Inter-MS DS-30 Cable Assy	NTEX5023			26, 39		RUL10
Fiber Optic Cable	A0352268			26, 39		RUL11
Warning Label'Lazer Warning'	P0645993			13, 26		RUL12
COMP MOD DUPLEX SH ASSY	NT9X0605	CM	1	13		AP-01
Comp Mod Duplex Comm CP	NT9X06AD		1	13		AP
-5V 20A POWER CONV.	NT9X31AA		2	13	1F, 33F	AP-03
+5V 80A POWER CONV.	NT9X30AA		2	13	4F, 36F	AP-03
6MB Memory	NTZZ01KA			13	16F-7F	RUL2
24MB Memory	NTZZ01LA			13	16F-7F	RUL2
Filler Face Plate	NTZZ01MA			13	16F-7F	RUL3
CPU Port CP	NT9X12AB		4	13	17F-18F 21F-22F	AP
CPU Processor CP	NT9X13BA			13	19F	RUL6
CPU Processor CP	NT9X13BB			13	19F	RUL6
Supernode Series 10 CPU CP	NTZZ01FA			13	19F	RUL6
Supernode Series 20 CPU CP	NTZZ01GA			13	19F	RUL6
Supernode Series 30 CPU CP	NTZZ01HA			13	19F	RUL6
Supernode Series 40 CPU CP	NTZZ01JA			13	19F	RUL6
Supernode BRISC CPU	NTZZ01SA			13	19F	RUL6
CM BUS TERMINATOR	NT9X21AA		2	13	7R, 32R	AP-03
Filler Face Plate	NT9X19BA			13	8R, 31R	RUL1
PB Filler Face Plate	NT9X19BA		14	13	9R-15R 24R-30R	AP
SUBSYSTEM CLOCK	NT9X22CA		2	13	16R, 23R	AP-03
DS512 PB	NT9X20AA		4	13	17R-18R 21R-22R	AP-03
SHELF CP FILL FRONT LABEL	P0700719		1	13		AP-03
SHELF CP FILL REAR LABEL	P0678438		1	13		AP-03
Cable Bulkhead (right)	NT9X6539		1	13		AP
Cable Bulkhead (left)	NT9X6540		1	13		AP
RS232C & Curr Loop Ca Assy	NT9X0196		2	13		AP
CM SLM EXT SHELF ASSY	NT9X0702	SLM	1	00		AP-01
SLM Common Module	NTZZ01BA			00		RUL1
Filler Packfill	NT9X01FB			00		RUL1
System Load Module II	NT9X44AB			00	8F, 24F	RUL1
Des Label (NT9X13DC)	P0696240		2	26, 39	9F	AP
Des Label (NT9X14BB)	P0689619		2	26, 39	10F	AP
Des Label (NT9X26AB)	P0705003		2	26, 39	9R,	AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Des Label (NT9X53AB)	P0705004		2	26,39	8F	AP
Des Label (NT9X54AC)	P0705005		2	26,39	8R	AP
Des Label (NT9X12AB)	P0700801		4	13	17F,18F 21F,22F	AP
Des Label (NT9X49CB)	P0697532		2	26,39	32F	AP
Warning Label, English ONLY "High Voltage"	P0675711		1			AP
Warning Label, English ONLY "High Voltage"	P0675712		4			AP
Warning Label, English ONLY "Disconnect Fan"	P0675710		1			RUL9

FLAGS:

NOTES:

RULES:

- AP 1) When PEC NTZZ97CA is ordered, these items are provided.
- AP-01 1) THIS PEC IS ALWAYS PROVIDED ON THE NT9X01JA CABINET, AND IS indicated here for completeness.
- AP-02 1) THIS PEC IS ALWAYS PROVIDED ON THE NT9X04AH MS COMMON CP, and is indicated here for completeness.
- AP-03 1) THIS PEC IS ALWAYS PROVIDED ON THE NT9X06AD CM COMMON CP, and is indicated here for completeness.
- RUL1 1) When the System Load Module (SLM) is a requirement, provide one (1) NTZZ01BA SLM Common fill and two (2) NT9X44AB SLM II units.
- 2) When the SLM is not a requirement, provide one (1) Filler Packfill NT9X01FB at shelf position 00, and two (2) Filler Face Plates, NT9X19BA, in shelf position 13 for card slots

8R,31R to satisfy the forced air cooling requirements of the frame.

- RUL2 1) Provision one (1) 24Mb Memory Circuit Packs, NTZZ01LA, for each 24Mb increment of memory required. A reminder that in addition to the operational memory provisioned, one extra memory CP must be provided per plane to be assigned as a reliability spare. The NTZZ01KA 6 MByte CP will be provisioned for STP offices only.
- 2) All offices must equip the Memory CP to the following algorithm: Starting with 24 MByte CP for mixed offices, Slot 16F,15F,14F,13F,12F,11F,10F,09F,08F,07F
- RUL3 1) Provision one (1) NTZZ01MA, Filler Face Plate in card slots (16F-07F) per the algorithm in RUL2, not equipped with a memory circuit pack.
- RUL4 1) Provide up to five (5) NTZZ01UA to interface Network and IOC per the following formula:

$$\# \text{ NTZZ01UA} = \frac{(\# \text{NM} + \# \text{IOC})}{8}$$

rounded up to the next integer. 'NM' is a single plane.

IOC:00 and IOC:01 have fixed assignments to MS CP position 29 port 0 and MS CP position 28 port 0 respectively. In addition it is recommended that port assignments proceed from higher number slots toward lower number slots. Each NTZZ01UA contains circuit packs and paddle boards for two (2) consecutive card slots on shelves 26 and 39. Assign NTZZ01UA in the following order; Slots 28, 26,24,22,20 (Applications needing additional ports will require ENET)

- 2) Provide up to four (4) NTZZ01VA to interface the LIM/LPP per the following formula:

$$\# \text{ NTZZ01VA} = \{ \# \text{ Link Interface Module Cabinets} / 2 \}$$

to be rounded up to the nearest multiple of 2.

It is recommended that port assignments proceed from higher number slots toward lower number slots. One (1) NTZZ01TA is required for STP applications to interface Network & IOC Modules. Each NTZZ01VA contains circuit packs and paddle boards for two (2) consecutive card slots on shelves 26 and 39. Assign NTZZ01VA in the following order; Slots 26,

24,22,20 (Applications needing additional ports will require ENET)

- 3) NT9X6544 cables are assigned from the NT9X23__ PBs to the DS_30 Bulkheads per the following:

CONNECT	FROM			TO	
CONNECTOR DESIGNATION	CARD SLOT	PORT	CONN	CONN DESIG	BULKHEAD DESIGNATION
(P2) ON NT9X23-- (DS30 4 PORT) CIRCUIT PACK	20R	0	P0	A0	DS30 BULKHEAD INTERFACE (RIGHT) REFERENCE NT9X6545
	20R	1	P1	A1	
	20R	2	P2	A2	
	20R	3	P3	A3	
	21R	0	P0	B0	
	21R	1	P1	B1	
	21R	2	P2	B2	
	21R	3	P3	B3	
	22R	0	P0	C0	
	22R	1	P1	C1	
	22R	2	P2	C2	
	22R	3	P3	C3	
	23R	0	P0	D0	
	23R	1	P1	D1	
	23R	2	P2	D2	
	23R	3	P3	D3	
	24R	0	P0	E0	
	24R	1	P1	E1	
	24R	2	P2	E2	
	24R	3	P3	E3	
	25R	0	P0	E0	DS30 BULKHEAD INTERFACE (LEFT) REFERENCE NT9X6546
	25R	1	P1	E1	
	25R	2	P2	E2	
	25R	3	P3	E3	
	26R	0	P0	D0	
	26R	1	P1	D1	
	26R	2	P2	D2	
	26R	3	P3	D3	
	27R	0	P0	C0	
	27R	1	P1	C1	
	27R	2	P2	C2	
	27R	3	P3	C3	
	28R	0	P0	B0	
	28R	1	P1	B1	
	28R	2	P2	B2	
	28R	3	P3	B3	
	29R	0	P0	A0	
	29R	1	P1	A1	
	29R	2	P2	A2	
	29R	3	P3	A3	

- 4) Provide up to eight (8) NTZZ01NA, Initial ENET Interface, for the first 64 Messaging Ports on each Port Group (on each ENET shelf). Each NTZZ01NA contains circuit packs and paddle boards for one (1) card slot on shelves 26 and 39. Assign NTZZ01NA in the following order; Slots 12,13,14,...25,26,27. It is recommended that port assignments proceed from lower number slots toward higher number slots.
 - 5) Provide up to 12 NTZZ01PA, Intermediate ENET Interface, if the port group exceeds 128 Messaging Ports (on each ENET shelf). Each NT9X25AA MS Port Expander PB extends the port group in multiples of 64 ports each. Each NTZZ01PA contains circuit packs and paddle boards for one (1) card slot on shelves 26 and 39. Assign NTZZ01PA in the following order; 13,14,15...24,25,26. It is recommended that port assignments proceed from lower number slots toward higher number slots.
 - 6) Provide up to eight (8) NTZZ01QA, Final ENET Interface, for the final 64 Messaging Ports on each Port Group (on each ENET shelf). for one (1) card slot on shelves 26 and 39. Assign NTZZ01QA in the following order; 13,14,15,...25,26,27. It is recommended that port assignments proceed from lower number slots toward higher number slots.
- RUL5 1) Provide one (1) NTZZ01EA for card slots 12 through 29 (Front and Rear) not equipped with NTZZ01CA, NTZZ01DA, NTZZ01NA, NTZZ01PA, NTZZ01QA, or NTZZ01ZA. Each NTZZ01EA contains circuit packs and paddle boards for one (1) card slot on shelves 26 and 39. NTZZ01EA can be assigned in card slots from 12 thru 29.
- RUL6 1) Provide one (1) NTZZ01FA CPU CP (for equipping card slots 19F and 20F) for each SuperNode Series 10 office.
- 2) Provide one (1) NTZZ01GA CPU CP (for equipping card slots 19F and 20F) for each SuperNode Series 20 or STP office. The NT9X13BA and NT9X13BB CPU CP are to be replaced by the NTZZ01GA CPU CP at BCS 26.
- 3) Provide one (1) NTZZ01HA CPU CP (for equipping card slots 19F and 20F) for each SuperNode Series 30 office.
- 4) Provide one (1) NTZZ01JA CPU CP (for card slots 19F and 20F) for each SuperNode Series 40 office.

- 5) Provide one (1) NTZZ01SA BRISC CPU CP (for card slots 19F and 20F). Minimum software release that is required is BCS-BR33.
 - 6) When UPGRADING from one CPU to another only order the CPU, not the Building Block as this comes with additional NT9X26ABs.
- RUL7 1) Provide one (1) NTZZ01ZA (Link Interface to FLIS) to interface to a FLIS in a Enhanced Multi-Purpose Cabinet.
- RUL8 1) Provide one (1) NTEX5001 Overhead Power Block Kit for overhead cabling of the Supernode Frame.
- RUL9 1) Provide one (1) P0675710 to be applied to the front of the cabinet below the blowers.
- RUL10 1) Provide NTEX5023 Cable for Inter-MS link option when interfacing with fiber link interface shelf(FLIS) for connection between MS 0 and MS 1 when copper connection is required for DS-30 paddleboards.
- RUL11 1) Provide A0352268 Cable for Inter-MS link option when interfacing with fiber link interface shelf(FLIS) for connection between MS 0 and MS 1 when fiber optic connection is required for DS-512 paddleboards.
- RUL12 1) Provide two (2) P0645993 Lazer Radiation Warning Labels when adding paddleboard that required fiber optic connections. (ie. NT9X20xx etc.)
- 2) Provide two (2) P0645993 Lazer Radiation Warning labels according to customer safety regulations that indicate that labels must be affixed to SuperNode cabinets provisioned with fiber optic cables.

SUPERNODE IN C42(S/DMS) CABINET BCS33 & BELOW

PEC CODE: NTZZ01RA

CPC CODE: B0234285

| RATING: Manufacture Discontinued

REPLACES: Not Applicable

| REPLACED BY: NTZZ01RN

ABBREVIATION NAME: DPCC

ENGINEERING DESCRIPTION: The SuperNode in C42(S/DMS) Cabinet contains the shelf assemblies, bulkheads, circuit packs and miscellaneous items that are always required for a SuperNode.

REFERENCE DOCUMENTATION: SLZZ01RA 00 04
NTZZ01RA REL 04
MS9X01JB 01 10
MS9X95BA 00 01
MSRX73 00 03

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA
Carrier
Wireless

ISSUE AUTHOR: NTI: Scott Maggiolo Dept. 3471 (PPK)

MAIN CONTACT: NTI: Scott Maggiolo Dept. 3471 (PPK)

NTZZ01RA EMC4-05-003 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
92 07 27	ECM 626 05	This BB for Cabinetized & Non-Cabi.
92 11 18	ECM 626 06	NT9X04AH Packfill is exploded in BB
93 01 29	ECM 626 07	ET-15569 Ref of NT9X95AA in main sec.
		Changes due to ECD: # 018-39706.
93 03 18	ECM 626 08	ET. # 26843 - Changes to RUL8.
93 07 12	ECM 626 09	ET. # 16829, see main body history.
		ET. # 17109, see main body history.
94 03 10	ECM 626 15	Introduce ECDs 018-41431, 024-89249, 024-89383.
94 04 19	ECM 626 16	Change title.
94 05 12	ECM 626 17	Remove IML requirement for NIU on LIM.
94 09 09	ECM 626 21	Retire Section.

The SuperNode in C42(S/DMS) Cabinet in Building Block is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Dual Plane Com Core Cab	NT9X01JB		1			AP
Frame Supervisory Panel	NT9X03AA	FSP		52		AP
C42 Cabinet Mechanical Assy	NT9X95BA		1			AP-01
End of Aisle Lamp Cable	NT9X0146					RUL7
End of Aisle Lamp Cable	NT9X0172					RUL7
Msg Sw Shelf Assembly	NT9X0440	MS	2	26, 39		AP-01
-5V 20A Converter	NT9X31AA		4	26, 39	1F, 33F	AP
+5V 80A Converter	NT9X30AA		4	26, 39	4F, 36F	AP
MS T-Bus Terminator CP	NT9X52AA		2	26, 39	7F	AP
Combined Clock CP	NT9X53AC		2	26, 39	8F	AP
Des Label (NT9X53AC)	P0726965		2	26, 39	8F	AP
CPU 16 MHZ CP	NT9X13DC		2	26, 39	9F	AP
Des Label (NT9X13DC)	P0696240		2	26, 39	9F	AP
6 MB Memory CP	NT9X14BB		2	26, 39	10F	AP
Des Label (NT9X14BB)	P0689619		2	26, 39	10F	AP
Mapper CP	NT9X15AA		2	26, 39	11F	AP
4 Port Network & IOC I/F (non-Cabinetized DMS)	NTZZ01CA			26	28F, 26F 24F, 22F 20F, 18F 16F, 14F 12F	RUL4
4 Port LIM/LPP Interface (non-Cabinetized DMS)	NTZZ01DA			26	26F, 24F 22F, 20F 18F, 16F 14F, 12F	RUL4
4 Port Network & IOC I/F (Cabinetized DMS)	NTZZ01UA			26	28F, 26F 24F, 22F 20F, 18F 16F, 14F 12F	RUL4
4 Port LIM/LPP Interface (Cabinetized DMS)	NTZZ01VA			26	26F, 24F 22F, 20F 18F, 16F 14F, 12F	RUL4
Initial ENET I/F	NTZZ01NA			26	27F-12F	RUL4
Intermediate ENET I/F	NTZZ01PA			26	26F-13F	RUL4
Final ENET I/F	NTZZ01QA			26	27F-13F	RUL4
I/F Filler Face Plate	NTZZ01EA			26	12F-29F	RUL5
Link Interface for FLIS	NTZZ01ZA			26, 39	27F-12F	RUL10
MS 4-Port CP	NT9X17AA		4	26, 39	30F, 31F	AP
MS P-Bus Terminator CP	NT9X49CB		2	26, 39	32F	AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Des Label (NT9X49CB)	P0697532		2	26, 39	32F	AP
MS Loading Paddle Board	NT9X32AA		4	26, 39	7R, 10R	AP
Subsystem Clock PB (Ext I/F)	NT9X54AC		2	26, 39	8R	AP
Des Label (NT9X54AC)	P0705005		2	26, 39	8R	AP
Remote Term I/F Curr Loop	NT9X26AB		2	26, 39	9R	AP
Desig. Label(NT9X26AB)	P0705003		2	26, 39	9R	AP
PB Filler Face Plate	NT9X19BA		4	26, 39	11R, 32R	AP
DS-512 PB	NT9X20AA		4	26, 39	30R-31R	AP
Shelf CP Fill Front Label	P0698334		2	26, 39		AP
Shelf CP Fill Rear Label	P0690632		2	26, 39		AP
MS Blkhd I/F (Left)	NT9X6556		2	26, 39		RUL16
(DMS-100)						
MS Blkhd I/F (Right)	NT9X6536		2	26, 39		RUL16
(DMS-100)						
DS30 Blkhd I/F (Left)	NT9X6546		2	26, 39		RUL16
(Cabinetized DMS)						
DS30 Blkhd I/F (Right)	NT9X6545		2	26, 39		RUL16
(Cabinetized DMS)						
Bulkhead coverplate assy.	NTEX5070			26, 39		RUL16
Screw Retainer	A0279319			26, 39		RUL16
Coax Ca Assy (NT9X54AC)	NT9X0192		4	26, 39		AP-01
Composite Clk CA Assy	NT9X0175		2	26, 39		AP-01
Inter-MS DS-30 Cable Assy	NTEX5022			26, 39		RUL12
Inter-MS DS-30 Cable Assy	NTEX5023			26, 39		RUL13
Fiber Optic Cable	A0352268			26, 39		RUL14
Optical Fiber Label(Eng.)	P0736273			39, 26, 13		RUL15
Comp Mod Duplex Sh Assy	NT9X0605	CM	1	13		AP-01
Comp Mod Duplex Comm CP	NT9X06AD		1	13		AP
-5V 20A Power Conv.	NT9X31AA		2	13	1F, 33F	AP-03
+5V 80A Power Conv.	NT9X30AA		2	13	4F, 36F	AP-03
6MB Memory	NTZZ01KA			13	16F-7F	RUL2
24MB Memory	NTZZ01LA			13	16F-7F	RUL2
Filler Face Plate	NTZZ01MA			13	16F-7F	RUL3
CPU Port CP	NT9X12AC		4	13	17F-18F	AP
					21F-22F	
Des Label (NT9X12AC)	P0727356		4	13	17F, 18F	AP
					21F, 22F	
CPU Processor CP	NT9X13BA			13	19F	RUL6
CPU Processor CP	NT9X13BB			13	19F	RUL6
Supernode Series 10 CPU CP	NTZZ01FA			13	19F	RUL6
Supernode Series 20 CPU CP	NTZZ01GA			13	19F	RUL6
Supernode Series 30 CPU CP	NTZZ01HA			13	19F	RUL6
Supernode Series 40 CPU CP	NTZZ01JA			13	19F	RUL6
Supernode BRISC CPU	NTZZ01SA			13	19F	RUL6

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
CM Bus Terminator	NT9X21AA		2	13	7R, 32R	AP-03
Filler Face Plate	NT9X19BA			13	8R, 31R	RUL1
PB Filler Face Plate	NT9X19BA		14	13	9R-15R	AP
					24R-30R	
Subsystem Clock	NT9X22CA		2	13	16R, 23R	AP-03
DS512 PB	NT9X20AA		4	13	17R-18R	AP-03
					21R-22R	
Shelf CP Fill Front Label	P0700719		1	13		AP-03
Shelf CP Fill Rear Label	P0678438		1	13		AP-03
Cable Bulkhead (right)	NT9X6539		1	13		AP
Cable Bulkhead (left)	NT9X6540		1	13		AP
RS232C & Curr Loop Ca Assy	NT9X0196		2	13		AP
CM SLM Ext Shelf Assy	NT9X0702	SLM	1	00		AP-01
SLM Common Module	NTZZ01BA			00		RUL1
Filler Packfill	NT9X01FB			00		RUL1
System Load Module II	NT9X44AB			00	8F, 24F	RUL1
Cooling Unit	NT9X95CU					AP
Stand-alone Power Cab. kit	NT9X9532					RUL8
(for non-Cabinetized Appl.)						
Horizontal Power Cab.kit	NT9X9531					RUL8
(for Cabinetized Appl.)						
Frame Fail Lamp (Grey)	NT0X24CN		1			RUL9
Rear Frame Fail Light(Grey)	P0699441		1			RUL9
Frame Fail Lamp (Brown)	NT0X24BT		1			RUL9
Rear Frame Fail Light(Brown)	P0674502		1			RUL9
Terminal Block Desig. Strip	P0737633		1			RUL20
APC Cab. power Filter Labels	P0736059		1			RUL20
ESP Ground Terminator Assy.	NT9X0324		1			RUL21
C42 Cabinet Mechanical Assy	NT9X95BA					NOTE3

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) NTXF27AA - Cesium, Loran Composite Master. For offices requiring external clock synchronization to Cesium/Rubidium Stratum I standard, provide the NTXF27AA package. Note that this package also supports Loran Composite Master clock source, but the necessary provisionable cable is not yet available for the latter application.
- 2) SLM II requires software package NTXE54AA. The Device Independent Recording Package(DIRP) on SLM is optional, and it is activated internally by the presence of package module DIRPSLM in NTXJ44AA - SLM File System.
- 3) Refer to NT9X95BA(EMA4-07-001) for additional mechanical hardware requirements for C42 Cabinet.

RULES:

- AP 1) When PEC NTZZ01RA is ordered, these items are provided.
- AP-01 1) This PEC is always provided on the NT9X01JB cabinet, and is indicated here for completeness.
- 2) Refer to NT9X95BA(EMA4-07-001) section for additional Mechanical Hardware requirements for C42(S/DMS) Cabinet
- AP-02 1) Deleted. The pecs in NT9X04AH Packfill are now always provided in NTZZ01RA

AP-03 1) This PEC is always provided on the NT9X06AD CM Common CP,
and is indicated here for completeness.

- RUL1 1) When the System Load Module (SLM) is a requirement, provide one (1) NTZZ01BA SLM Common fill and two (2) NT9X44AB SLM II units.

SLM II requires software package NTXE54AA. The Device Independent Recording Package(DIRP) on SLM is optional, and it is activated internally by the presence of package module DIRPSLM in NTXJ44AA - SLM File System.

- 2) When the SLM is not a requirement, provide one (1) Filler Packfill NT9X01FB at shelf position 00, and two (2) Filler Face Plates, NT9X19BA, in shelf position 13 for card slots 8R,31R to satisfy the forced air cooling requirements of the frame.

- RUL2 1) Provision one (1) 24Mb Memory Circuit Packs, NTZZ01LA, for each 24Mb increment of memory required. A reminder that in addition to the operational memory provisioned, one extra memory CP must be provided per plane to be assigned as a reliability spare. The NTZZ01KA 6 MByte CP will be provisioned for STP offices only.

- 2) All offices must equip the Memory CP to the following algorithm: Starting with 24 MByte CP for mixed offices, Slot 16F,15F,14F,13F,12F,11F,10F,09F,08F,07F

- RUL3 1) Provision one (1) NTZZ01MA, Filler Face Plate in card slots (16F-07F) per the algorithm in RUL2, not equipped with a memory circuit pack.

- RUL4 1) Provide up to nine (9) NTZZ01CA to interface Network and IOC per the following formula,
$$\#NTZZ01CA = \{(\#NM/4) + (\#IOC/8)\}$$
 rounded up to the next int.

Each NM requires total of two ports. Each port must be on an adjacent slot.(one port out of 4 ports from each slot)

Each IOC requires one port out of four ports.

IOC:00 and IOC:01 have fixed assignments to MS CP position 29 port 0 and MS CP position 28 port 0 respectively. In addition it is recommended that port assignments proceed from higher number slots toward lower number slots. Each NTZZ01CA contains circuit packs and paddle boards for two (2) consecutive card slots on shelves 26 and 39. Assign NTZZ01CA in the following order; Slots 28, 26,24,22,20,18,16,14,12

- 2) Provide up to eight (8) NTZZ01DA to interface the LIM/LPP per the following formula,

NTZZ01DA = {# Link Interface Module Cabinets / 2 }
to be rounded up to the next integer.

It is recommended that port assignments proceed from higher number slots toward lower number slots. One (1) NTZZ01CA is required for STP applications to interface Network & IOC Modules. Each NTZZ01DA contains circuit packs and paddle boards for two (2) consecutive card slots on shelves 26 and 39. Assign NTZZ01DA in the following order; Slots 26, 24, 22, 20, 18, 16, 14, 12.

- 3) NT9X0145 cables are assigned from the NT9X23__ PBs to the DS_30 Bulkheads as follows:

FROM CONNECTOR P2 OF NT9X23__ IN PB POSITION	TO	
	CONN DESIG	BULKHEAD DESIGNATION
12R 13R 14R 15R 16R 17R 18R 19R 20R	A B C D E F G H I	DS30 BULKHEAD INTERFACE (RIGHT) NT9X6536
21R 22R 23R 24R 25R 26R 27R 28R 29R	G H I D E F A B C	DS30 BULKHEAD INTERFACE (LEFT) NT9X6556

- 4) Provide up to five (5) NTZZ01UA to interface Network and IOC per the following formula:

$$\#NTZZ01UA = \{(\#NM/4) + (\#IOC/8)\}$$
rounded up to the next int.

Each NM requires total of two ports. Each port must be on an adjacent slot.(one port out of 4 ports from each slot)
Each IOC requires one port out of four ports.

IOC:00 and IOC:01 have fixed assignments to MS CP position 29 port 0 and MS CP position 28 port 0 respectively. In addition it is recommended that port assignments proceed from higher number slots toward lower number slots. Each NTZZ01UA contains circuit packs and paddle boards for two (2) consecutive card slots on shelves 26 and 39. Assign NTZZ01UA in the following order; Slots 28, 26,24,22,20 (Applications needing additional ports will require ENET)

- 5) Provide up to four (4) NTZZ01VA to interface the LIM/LPP per the following formula:

NTZZ01VA = {# Link Interface Module Cabinets / 2 }
to be rounded up to the next integer.

It is recommended that port assignments proceed from higher number slots toward lower number slots. One (1) NTZZ01UA is required for STP applications to interface Network & IOC Modules. Each NTZZ01VA contains circuit packs and paddle boards for two (2) consecutive card slots on shelves 26 and 39. Assign NTZZ01VA in the following order; Slots 26, 24, 22, 20 (Applications needing additional ports will require ENET)

- 6) NT9X6544 cables are assigned from the NT9X23__ PBs to the DS_30 Bulkheads per the following:

CONNECT	FROM			TO	
CONNECTOR DESIGNATION	CARD SLOT	PORT	CONN	CONN DESIG	BULKHEAD DESIGNATION
(P2) ON NT9X23-- (DS30 4 PORT) CIRCUIT PACK	20R	0	P0	A0	DS30 BULKHEAD INTERFACE (RIGHT) REFERENCE NT9X6545
	20R	1	P1	A1	
	20R	2	P2	A2	
	20R	3	P3	A3	
	21R	0	P0	B0	
	21R	1	P1	B1	
	21R	2	P2	B2	
	21R	3	P3	B3	
	22R	0	P0	C0	
	22R	1	P1	C1	
	22R	2	P2	C2	
	22R	3	P3	C3	
	23R	0	P0	D0	
	23R	1	P1	D1	
	23R	2	P2	D2	
	23R	3	P3	D3	
	24R	0	P0	E0	
	24R	1	P1	E1	
	24R	2	P2	E2	
	24R	3	P3	E3	
	25R	0	P0	E0	DS30 BULKHEAD INTERFACE (LEFT) REFERENCE NT9X6546
	25R	1	P1	E1	
	25R	2	P2	E2	
	25R	3	P3	E3	
	26R	0	P0	D0	
	26R	1	P1	D1	
	26R	2	P2	D2	
	26R	3	P3	D3	
	27R	0	P0	C0	
	27R	1	P1	C1	
	27R	2	P2	C2	
	27R	3	P3	C3	
	28R	0	P0	B0	
	28R	1	P1	B1	
	28R	2	P2	B2	
	28R	3	P3	B3	
	29R	0	P0	A0	
	29R	1	P1	A1	
	29R	2	P2	A2	
	29R	3	P3	A3	

- 7) Provide up to four (4) NTZZ01NA, Initial ENET Interface, for the first 64 Messaging Ports on each Port Group (on each ENET shelf). Note that for each ENET shelf one NTZZ01NA must be provisioned. Each NTZZ01NA contains circuit packs and paddle boards for one (1) card slot on shelves 26 and 39. Assign NTZZ01NA in the following order; Slots 12,14,15,...24,25,27. It is recommended that port assignments proceed from lower number slots towards higher number slots.
- 8) Provide up to six (6) NTZZ01PA, Intermediate ENET Interface, if the port group exceeds 128 Messaging Ports (on each ENET shelf). Each NT9X25AA MS Port Expander PB extends the port group in multiples of 64 ports each. Each NTZZ01PA contains circuit packs and paddle boards for one (1) card slot on shelves 26 and 39. Assign NTZZ01PA in the following order; 13,14,15,...24,25,26. It is recommended that port assignments proceed from lower number slots toward higher number slots.
- 9) Provide up to four (4) NTZZ01QA, Final ENET Interface, for the final 64 Messaging Ports on each Port Group (on each ENET shelf). Each NTZZ01QA contains circuit packs and paddle boards for one (1) card slot on shelves 26 and 39. Assign NTZZ01QA in the following order; 13,14,15,...25,26,27. It is recommended that port assignments proceed from lower number slots toward higher number slots.

- 10 Assign the ENET ports to the lowest numbered MS slots in ascending order starting from slot 12 (i.e. slots 12, 13, etc.). However, the SAEs and EAES should anticipate and plan all future growth on each ENET shelf and provision the MS cards accordingly, by leaving a spare slot for future expansion if necessary, as shown below.

For 64 Ports Requirement

	Front	Rear	
n	NT9X17DA	NT9X20BB	to Plane 0 of ENET
n+1			reserve for future growth

	Front	Rear	
n+2	NT9X17DA	NT9X20BB	to Plane 1 of ENET
n+3			reserve for future growth

For 128 Ports Requirement

	Front	Rear	
n	NT9X17DA	NT9X20BB	to Plane 0 of ENET
n+1	NT9X17DA	NT9X25BA	
n+2			reserve for future growth

	Front	Rear	
n+3	NT9X17DA	NT9X20BB	to Plane 1 of ENET
n+4	NT9X17DA	NT9X25BA	
n+5			reserve for future growth

	Front	Rear	
12	NT9X17DA	NT9X20BB	to Plane 0 of ENET, 192 PORTS
13	NT9X17DA	NT9X25AA	
14	NT9X17DA	NT9X25BA	
15	NT9X17DA	NT9X20BB	to Plane 1 of ENET, 192 PORTS
16	NT9X17DA	NT9X25AA	
17	NT9X17DA	NT9X25BA	

	Front	Rear	
12	NT9X17DA	NT9X20BB	to Plane 0 of ENET, 256 PORTS
13	NT9X17DA	NT9X25AA	
14	NT9X17DA	NT9X25AA	
15	NT9X17DA	NT9X25BA	
16	NT9X17DA	NT9X20BB	to Plane 1 of ENET, 256 PORTS
17	NT9X17DA	NT9X25AA	
18	NT9X17DA	NT9X25AA	
19	NT9X17DA	NT9X25BA	

RUL5 1) Provide one (1) NTZZ01EA for card slots 12 through 29 (Front and Rear) not equipped with NTZZ01CA, NTZZ01DA, NTZZ01NA, NTZZ01PA, NTZZ01QA, or NTZZ01ZA. Each NTZZ01EA contains circuit packs and paddle boards for one (1) card slot on shelves 26 and 39. NTZZ01EA can be assigned in card slots from 12 thru 29.

RUL6 1) Provide one (1) NTZZ01FA CPU CP (for equipping card slots 19F and 20F) for each SuperNode Series 10 office.

2) Provide one (1) NTZZ01GA CPU CP (for equipping card slots 19F and 20F) for each SuperNode Series 20 or STP office. The NT9X13BA and NT9X13BB CPU CP are to be replaced by the NTZZ01GA CPU CP at BCS 26.

3) Provide one (1) NTZZ01HA CPU CP (for equipping card slots 19F and 20F) for each SuperNode Series 30 office.

4) Provide one (1) NTZZ01JA CPU CP (for card slots 19F and 20F) for each SuperNode Series 40 office. (When UPGRADING from one CPU to another only order the CPU, not the Building Block as this comes with NT9X26ABs)

5) Provide one (1) NTZZ01SA BRISC CPU CP (for card slots 19F and 20F). Minimum software release that is required is BCS-BR33.

- 6) When UPGRADING from one CPU to another only order the CPU, not the Building Block as this comes with additional NT9X26ABs.
- RUL7 1) Please refer to CA drawings for U.S Applications and ignore the other parts of rul7.
- 2) If you have more than two (2) cabinets in the lineup then refer to the CA Drawings.
- 3) Provide one (1) End of Aisle Lamp cable assembly (NT9X0146) if this is the last cabinet in the line-up.
- 4) Provide one (1) End of Aisle Lamp cable assembly (NT9X0172) if the spares cabinet (NT9X01FA) is located between the NT9X01JB and the end of the line-up. Note that, NT9X01FA has a rate change pending. Use NTRX49AA instead.
- RUL8 1) Provide one (1) NT9X9532 stand-alone Cabling Interface Kit when powering the NT9X01JB cabinet from the 7 foot PDC frame OR powering from the new CPDC (NTRX31CA) cabinet, OR powering from the NTRX31AA or from the NTRX31BA CPDC cabinet which is in the different lineup than the NT9X01JB. This kit includes cables, filters, and miscellaneous mounting hardware.
- 2) Provide one (1) NT9X9531 Horizontal Power Cabling Interface Kit when powering the NT9X01JB cabinet from the NTRX31AA or from the NTRX31BA CPDC cabinet which is in the same lineup as the NT9X01JB. This kit includes power cables, terminal blocks, and miscellaneous mounting hardware.
- RUL9 1) Provide one (1) NT0X24BT, Frame Fail Lamp (Brown), and one P0674502, Rear Frame Fail Light, per brown DPCC cabinet NT9X01JB. Use only with other brown exterior parts.
- 2) Provide one (1) NT0X24CN, Frame Fail Lamp (Grey), and one P0699441, Rear Frame Fail Light, per grey DPCC cabinet NT9X01JB. Use only with other grey exterior parts.
- RUL10 1) Provide one (1) NTZZ01ZA (Link Interface to FLIS) to interface to a FLIS in a Enhanced Multi-Purpose Cabinet.
- RUL11 1) Deleted
- RUL12 1) Provide NTEX5022 Cable for Inter-MS link option when interfacing with fiber link interface shelf(FLIS) for connection between MS 0 and MS 1 when copper connection is required

for DS-30 paddleboards when supernode cabinets are provisioned.

- RUL13 1) Provide NTEX5023 Cable for Inter-MS link option when interfacing with fiber link interface shelf (FLIS) for connection between MS 0 and MS 1 when copper connection is required for DS-30 paddleboards when Cabinetized DMS cabinets are provisioned.
- RUL14 1) Provide A0352268 Cable for Inter-MS link option for connection between MS 0 and MS 1 when fiber optic connection is required for DS-512 paddleboards. This is not yet verified for FLIS application.
- RUL15 1) Provide two (2) P0736273 Optical Fiber Label when adding paddleboard that required fiber optic connections. (ie. NT9X20xx etc.)
- 2) Provide two (2) P0736273 Optical Fiber Labels according to customer safety regulations that indicate that, labels must be affixed to SuperNode cabinets provisioned with fiber optic cables.
- RUL16 1) Provide one (1) NT9X6556 MS Bulkhead Interface Left and one (1) NT9X6536 DS-30 Bulkhead Interface Right per MS shelf in NT9X01JB Cabinet for non-Cabinetized DMS(stand-alone) application.
- 2) Provide one (1) NT9X6546 DS-30 Bulkhead Interface Left and one (1) NT9X6545 DS-30 Bulkhead Interface Right per MS shelf in NT9X01JB Cabinet for Cabinetized DMS(streamline) application. Also Provide one (1) NTEX5070 Bulkhead cover plate assembly and one (1) A0279319 screw retainer for each unequipped connector position in the NT9X6545 and NT9X6546 Bulkheads.
- RUL17 1) Deleted.
- RUL18 1) Deleted.
- RUL19 1) Deleted.
- RUL20) 1) Provide one (1) P0737633 DPCC terminal block designation strip per DPCC when powering the NT9X01JB cabinet in a Cabinetized DMS application.
- 2) Provide one (1) P0736059 APC Cabinet power Filter Labels per DPCC cabinet, when powering the DPCC cabinet in a non-Cabinetized DMS application.

RUL21) 1) Provide one (1) NT9X0324 ESP Ground Terminator Assembly in all British telephone system.

SUPERNODE IN C42(S/DMS) CABINET BCS33 & BELOW

PEC CODE: NTZZ01RN

CPC CODE: B0241555

| RATING: MD

REPLACES: NTZZ01RA

REPLACED BY: NTZZ01RF

ABBREVIATION NAME: DPCC

ENGINEERING DESCRIPTION: The SuperNode in C42(S/DMS) Cabinet contains the shelf assemblies, bulkheads, circuit packs and miscellaneous items that are always required for a SuperNode. This Building Block should only be used for offices that will end up at less than BCS34.

REFERENCE DOCUMENTATION: SLZZ01RN 00 01
NTZZ01RN REL 01
MS9X01JB 01 20
MS9X95BA 00 01
MSRX73 00 03

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA
Carrier
Wireless

ISSUE AUTHOR: NTI: Scott Maggiolo Dept. 3471 (PPK)

MAIN CONTACT: NTI: Scott Maggiolo Dept. 3471 (PPK)

NTZZ01RN EMC4-05-004 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 09 09	ECM 626 21	ECD 006-20443 Introduce NT9X12AD.
94 10 18	ECM 626 22	Minor changes.
95 02 09	ECM 626 23	Rewrite and divide Rule 4 for clarity. Renumber all rules following Rule 4. Rewrite Rule 10 for clarity. Minor changes.
95 07 11	ECM 626 25	Clarify provisioning of NTEX5070 in RUL18 per ET 71573. MD the NT9X13BB and replace with the NT9X13BC. Refer to ECD 006-17687.
95 08 28	ECM 626 26	EC018-45801 Remove frame fail lights.
95 12 19	ECM 626 29	ET27919 Remove M5 cables. MD Section.

The SuperNode in C42(S/DMS) Cabinet in Building Block is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Dual Plane Com Core Cab	NT9X01JB		1			AP
Frame Supervisory Panel	NT9X03AA	FSP	1	52		AP
C42 Cabinet Mechanical Assy	NT9X95BA		1			AP-01
End of Aisle Lamp Cable	NT9X0146					RUL9
End of Aisle Lamp Cable	NT9X0172					RUL9
Msg Sw Shelf Assembly	NT9X0440	MS	2	26, 39		AP-01
-5V 20A Converter	NT9X31AA		4	26, 39	1F, 33F	AP
+5V 80A Converter	NT9X30AA		4	26, 39	4F, 36F	AP
MS T-Bus Terminator CP	NT9X52AA		2	26, 39	7F	AP
Combined Clock CP	NT9X53AC		2	26, 39	8F	AP
Des Label (NT9X53AC)	P0726965		2	26, 39	8F	AP
CPU 16 MHZ CP	NT9X13DC		2	26, 39	9F	AP
Des Label (NT9X13DC)	P0696240		2	26, 39	9F	AP
6 MB Memory CP	NT9X14BB		2	26, 39	10F	AP
Des Label (NT9X14BB)	P0689619		2	26, 39	10F	AP
Mapper CP	NT9X15AA		2	26, 39	11F	AP
4 Port Network & IOC I/F (non-Cabinetized DMS)	NTZZ01CA			26	28F, 26F 24F, 22F 20F, 18F 16F, 14F 12F	RUL4
4 Port LIM/LPP Interface (non-Cabinetized DMS)	NTZZ01DA			26	26F, 24F 22F, 20F 18F, 16F 14F, 12F	RUL4
4 Port Network & IOC I/F (Cabinetized DMS)	NTZZ01UA			26	28F, 26F 24F, 22F 20F, 18F 16F, 14F 12F	RUL5
4 Port LIM/LPP Interface (Cabinetized DMS)	NTZZ01VA			26	26F, 24F 22F, 20F 18F, 16F 14F, 12F	RUL5
Initial ENET I/F	NTZZ01NA			26	27F-12F	RUL6
Intermediate ENET I/F	NTZZ01PA			26	26F-13F	RUL6
Final ENET I/F	NTZZ01QA			26	27F-13F	RUL6
I/F Filler Face Plate	NTZZ01EA			26	12F-29F	RUL7
Link Interface for FLIS/APC	NTZZ01ZA			26, 39	27F-12F	RUL12
MS 4-Port CP	NT9X17AA		4	26, 39	30F, 31F	AP
MS P-Bus Terminator CP	NT9X49CB		2	26, 39	32F	AP
Des Label (NT9X49CB)	P0697532		2	26, 39	32F	AP

Retired Equipment
SuperNode in C42(S/DMS) Cabinet BCS33 3 BELOW

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EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
MS Loading Paddle Board	NT9X32AA		4	26, 39	7R, 10R	AP
Subsystem Clock PB (Ext I/F)	NT9X54AC		2	26, 39	8R	AP
Des Label (NT9X54AC)	P0705005		2	26, 39	8R	AP
Remote Term I/F Curr Loop	NT9X26AB		2	26, 39	9R	AP
Desig. Label(NT9X26AB)	P0705003		2	26, 39	9R	AP
PB Filler Face Plate	NT9X19BA		4	26, 39	11R, 32R	AP
DS-512 PB	NT9X20AA		4	26, 39	30R-31R	AP
Shelf CP Fill Front Label	P0698334		2	26, 39		AP
Shelf CP Fill Rear Label	P0690632		2	26, 39		AP
MS Blkhd I/F (Left)	NT9X6556		2	26, 39		RUL18
(DMS-100)						
MS Blkhd I/F (Right)	NT9X6536		2	26, 39		RUL18
(DMS-100)						
DS30 Blkhd I/F (Left)	NT9X6546		2	26, 39		RUL18
(Cabinetized DMS)						
DS30 Blkhd I/F (Right)	NT9X6545		2	26, 39		RUL18
(Cabinetized DMS)						
Bulkhead coverplate assy.	NTEX5070			26, 39		RUL18
Screw Retainer	A0279319			26, 39		RUL18
Inter-MS DS-30 Cable Assy	NTEX5022			26, 39		RUL14
Inter-MS DS-30 Cable Assy	NTEX5023			26, 39		RUL15
Fiber Optic Cable	A0352268			26, 39		RUL16
Optical Fiber Label(Eng.)	P0736273			39, 26, 13		RUL17
Comp Mod Duplex Sh Assy	NT9X0605	CM	1	13		AP-01
Comp Mod Duplex Comm CP	NT9X06AD		1	13		AP
-5V 20A Power Conv.	NT9X31AA		2	13	1F, 33F	AP-03
+5V 80A Power Conv.	NT9X30AA		2	13	4F, 36F	AP-03
6MB Memory	NTZZ01KA			13	16F-7F	RUL2
24MB Memory	NTZZ01LA			13	16F-7F	RUL2
Filler Face Plate	NTZZ01MA			13	16F-7F	RUL3
CPU Port CP	NT9X12AD		4	13	17F-18F	AP
					21F-22F	
Des Label (NT9X12AD)	P0725905		4	13	17F, 18F	AP
					21F, 22F	
CPU Processor CP	NT9X13BA			13	19F	RUL8
% CPU Processor CP	NT9X13BB			13	19F	RUL8
CPU Processor CP	NT9X13BC			13	19F	RUL8
Supernode Series 10 CPU CP	NTZZ01FA			13	19F	RUL8
Supernode Series 20 CPU CP	NTZZ01GA			13	19F	RUL8
Supernode Series 30 CPU CP	NTZZ01HA			13	19F	RUL8
Supernode Series 40 CPU CP	NTZZ01JA			13	19F	RUL8
Supernode BRISC 50/60 CPU	NTZZ01SB			13	19F	RUL8
CM Bus Terminator	NT9X21AA		2	13	7R, 32R	AP-03
Filler Face Plate	NT9X19BA			13	8R, 31R	RUL1
PB Filler Face Plate	NT9X19BA		14	13	9R-15R	AP

Retired Equipment
SuperNode in C42(S/DMS) Cabinet BCS33 4 BELOW

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EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Subsystem Clock	NT9X22CA		2	13	24R-30R	AP-03
DS512 PB	NT9X20AA		4	13	16R, 23R	AP-03
					17R-18R	AP-03
					21R-22R	
Shelf CP Fill Front Label	P0700719		1	13		AP-03
Shelf CP Fill Rear Label	P0678438		1	13		AP-03
Cable Bulkhead (right)	NT9X6539		1	13		AP
Cable Bulkhead (left)	NT9X6540		1	13		AP
RS232C & Curr Loop Ca Assy	NT9X0196		2	13		AP
CM SLM Ext Shelf Assy	NT9X0702	SLM	1	00		AP-01
SLM Common Module	NTZZ01BB			00		RUL1
Filler Packfill	NT9X01FB			00		RUL1
System Load Module II	NT9X44AB			00	8F, 24F	RUL1
Cooling Unit	NT9X95CU		1			AP
Stand-alone Power Cab. kit	NT9X9532					RUL10
(for non-Cabinetized Appl.)						
Horizontal Power Cab.kit	NT9X9531					RUL10
(for Cabinetized Appl.)						
Terminal Block Desig. Strip	P0737633		1			RUL10
APC Cab. power Filter Labels	P0736059		1			RUL10
ESP Ground Terminator Assy.	NT9X0324		1			RUL23
C42 Cabinet Mechanical Assy	NT9X95BA					NOTE3

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT9X13BB	MD	NT9X13BC

DEV - DEVELOPMENT. These products are in the development phase.
Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if
they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufac-
tured and cannot be ordered.

NOTES:

- 1) NTXF27AA - Cesium, Loran Composite Master. For offices requiring external clock synchronization to Cesium/Rubidium Stratum I standard, provide the NTXF27AA package. Note that this package also supports Loran Composite Master clock source, but the necessary provisionable cable is not yet available for the latter application.
- 2) SLM II requires software package NTXE54AA. The Device Independent Recording Package(DIRP) on SLM is optional, and it is activated internally by the presence of package module DIRPSLM in NTXJ44AA - SLM File System.
- 3) Refer to NT9X95BA(EMA4-07-001) for additional mechanical hardware requirements for C42 Cabinet.

RULES:

- AP 1) When PEC NTZZ01RN is ordered, these items are provided.
- AP-01 1) This PEC is always provided on the NT9X01JB cabinet, and is indicated here for completeness.
- 2) Refer to NT9X95BA(EMA4-07-001) section for additional Mechanical Hardware requirements for C42(S/DMS) Cabinet
- AP-02 1) Deleted. The pecs in NT9X04AH Packfill are now always provided in NTZZ01RN
- AP-03 1) This PEC is always provided on the NT9X06AD CM Common CP, and is indicated here for completeness.

- RUL1 1) When the System Load Module (SLM) is a requirement, provide one (1) NTZZ01BB SLM Common fill and two (2) NT9X44AB SLM II units.

SLM II requires software package NTXE54AA. The Device Independent Recording Package(DIRP) on SLM is optional, and it is activated internally by the presence of package module DIRPSLM in NTXJ44AA - SLM File System.

- 2) When the SLM is not a requirement, provide one (1) Filler Packfill NT9X01FB at shelf position 00, and two (2) Filler Face Plates, NT9X19BA, in shelf position 13 for card slots 8R,31R to satisfy the forced air cooling requirements of the frame.

- RUL2 1) Provision one (1) 24Mb Memory Circuit Packs, NTZZ01LA, for each 24Mb increment of memory required. A reminder that in addition to the operational memory provisioned, one extra memory CP must be provided per plane to be assigned as a reliability spare. The NTZZ01KA 6 MByte CP will be provisioned for STP offices only.

- 2) All offices must equip the Memory CP to the following algorithm: Starting with 24 MByte CP for mixed offices, Slot 16F,15F,14F,13F,12F,11F,10F,09F,08F,07F

- RUL3 1) Provision one (1) NTZZ01MA, Filler Face Plate in card slots (16F-07F) per the algorithm in RUL2, not equipped with a memory circuit pack.

- RUL4 1) Non-cabinetized office: Provide up to nine (9) NTZZ01CA to interface Network modules and IOCs per the following formula:

$$\#NTZZ01CA = (\#NM/4) + (\#IOC/8)$$

Note: Round the formula result up to the next integer.

Each NTZZ01CA provides a total of four circuit packs and paddle boards. Two circuit packs and paddle boards are mounted on MS0 (shelf 26). The additional two circuit packs and paddle boards are mounted on MS1 (shelf 39).

Assign NTZZ01CA in the following order:
Slots 28,26,24,22,20,18,16,14,12

Each circuit pack contains four ports.

Each IOC interface uses one port per plane. IOC:00 and IOC:01 have fixed assignments. IOC:00 is assigned to MS CP

position 29, port 0. IOC:01 is assigned to MS CP position 28, port 0.

Each NM interface uses two ports per plane. The two NM interface ports per plane must be on separate, but adjacent circuit packs. Port assignments are recommended to proceed from higher number slots toward lower number slots.

- 2) Non-cabinetized offices: Provide up to eight (8) NTZZ01DA to interface the LIM/LPP per the following formula:

NTZZ01DA = #Link Interface Module Cabinets / 2

Note: Round the formula result up to the next integer.

Each NTZZ01DA provides a total of four circuit packs and paddle boards. Two circuit packs and paddle boards are mounted on MS0 (shelf 26). The additional two circuit packs and paddle boards are mounted on MS1 (shelf 39).

Assign NTZZ01DA in the following order:
Slots 26,24,22,20,18,16,14,12.

Each circuit pack contains four ports.

Each LIM/LPP interface uses four ports per plane. The four ports per plane are assigned in pairs. The LIM/LPP port pairs must be on separate, but adjacent circuit packs.

It is recommended that port assignments proceed from higher number slots toward lower number slots.

- 3) Non-cabinetized offices: The cables (NT9X0145) for offices containing NTZZ01CA or NTZZ01DA are assigned from the NT9X23__ PBs to the DS_30 Bulkheads as follows:

FROM CONNECTOR P2 OF NT9X23__ IN PB POSITION	TO	
	CONN DESIG	BULKHEAD DESIGNATION
12R 13R 14R 15R 16R 17R 18R 19R 20R	A B C D E F G H I	DS30 BULKHEAD INTERFACE (RIGHT) NT9X6536
21R 22R 23R 24R 25R 26R 27R 28R 29R	G H I D E F A B C	DS30 BULKHEAD INTERFACE (LEFT) NT9X6556

- RUL5 1) Cabinetized offices: Provide up to five (5) NTZZ01UA to interface Network modules and IOCs per the following formula:

$\#NTZZ01UA = (\#NM/4) + (\#IOC/8)$
Round the formula result up to the next integer.

Each NTZZ01UA provides a total of four circuit packs and paddle boards. Two circuit packs and paddle boards are mounted on MS0 (shelf 26). The additional two circuit packs and paddle boards are mounted on MS1 (shelf 39).

Assign NTZZ01UA in the following order:
Slots 28,26,24,22,20

Each circuit pack contains four ports.

Each IOC interface uses one port per plane. IOC:00 and IOC:01 have fixed assignments. IOC:00 is assigned to MS CP

position 29, port 0. IOC:01 is assigned to MS CP position 28, port 0.

Each NM interface uses two ports per plane. The two NM ports per plane must be mounted on separate, but adjacent circuit packs.

Port assignments are recommended to proceed from higher number slots toward lower number slots.

Note: Applications needing additional ports will require ENET.

- 2) Cabinetized offices: Provide up to four (4) NTZZ01VA to interface the LIM/LPP per the following formula:

#NTZZ01VA = #Link Interface Module Cabinets / 2
Round the formula result up to the next integer.

Each NTZZ01VA provides a total of four circuit packs and paddle boards. Two circuit packs and paddle boards are mounted in MS0 (shelf 26). The additional two circuit packs and paddle boards are mounted in MS1 (shelf 39).

Assign NTZZ01VA in the following order:
Slots 26, 24, 22, 20

Each circuit pack contains four ports.

Each LIM/LPP interface requires four ports per plane. The LIM/LPP interface ports are assigned in pairs. The LIM/LPP port pairs must be on separate, but adjacent circuit packs.

It is recommended that port assignments proceed from higher number slots toward lower number slots.

Note: Applications needing additional ports will require ENET.

- 3) Cabinetized offices: The cables (NT9X6544) for offices containing NTZZ01UA or NTZZ01VA are assigned from the NT9X23__ PBs to the DS_30 Bulkheads per the following:

CONNECT	FROM			TO	
CONNECTOR DESIGNATION	CARD SLOT	PORT	CONN	CONN DESIG	BULKHEAD DESIGNATION
(P2) ON NT9X23-- (DS30 4 PORT) CIRCUIT PACK	20R	0	P0	A0	DS30 BULKHEAD INTERFACE (RIGHT) REFERENCE NT9X6545
	20R	1	P1	A1	
	20R	2	P2	A2	
	20R	3	P3	A3	
	21R	0	P0	B0	
	21R	1	P1	B1	
	21R	2	P2	B2	
	21R	3	P3	B3	
	22R	0	P0	C0	
	22R	1	P1	C1	
	22R	2	P2	C2	
	22R	3	P3	C3	
	23R	0	P0	D0	
	23R	1	P1	D1	
	23R	2	P2	D2	
	23R	3	P3	D3	
	24R	0	P0	E0	
	24R	1	P1	E1	
	24R	2	P2	E2	
	24R	3	P3	E3	
	25R	0	P0	E0	DS30 BULKHEAD INTERFACE (LEFT) REFERENCE NT9X6546
	25R	1	P1	E1	
	25R	2	P2	E2	
	25R	3	P3	E3	
	26R	0	P0	D0	
	26R	1	P1	D1	
	26R	2	P2	D2	
	26R	3	P3	D3	
	27R	0	P0	C0	
	27R	1	P1	C1	
	27R	2	P2	C2	
	27R	3	P3	C3	
	28R	0	P0	B0	
	28R	1	P1	B1	
	28R	2	P2	B2	
	28R	3	P3	B3	
	29R	0	P0	A0	
	29R	1	P1	A1	
	29R	2	P2	A2	
	29R	3	P3	A3	

- RUL6 1) ENET Offices: For the first 64 Messaging Ports for each ENET shelf pair, provide two (2) NTZZ01NA. Two NTZZ01NA provide one (1) NT9X17DA and one (1) NT9X20BB for each of the four port groups. The port groups are defined as follows:

port group 1 = ENET shelf plane 0 / MS0 interface
port group 2 = ENET shelf plane 0 / MS1 interface
port group 3 = ENET shelf plane 1 / MS0 interface
port group 4 = ENET shelf plane 1 / MS1 interface

MS0 and MS1 together can accommodate up to eight (8) NTZZ01NA.

Each NTZZ01NA provides two circuit packs and paddle boards. One circuit pack is mounted in MS0 (shelf 26). The other circuit pack is mounted in MS1 (shelf 39).

Assign NTZZ01NA in the following order:
Slots 12,14,15...24,25,27.

It is recommended that port assignments proceed from lower number slots towards higher number slots.

- 2) ENET Offices: For the final 64 Messaging Ports for each ENET shelf pair, provide two (2) NTZZ01QA. Two NTZZ01QA provide one (1) NT9X17DA and one (1) NT9X25BA for each of the four port groups. The port groups are defined as follows:

port group 1 = ENET shelf plane 0 / MS0 interface
port group 2 = ENET shelf plane 0 / MS1 interface
port group 3 = ENET shelf plane 1 / MS0 interface
port group 4 = ENET shelf plane 1 / MS1 interface

MS0 and MS1 together can accommodate up to eight (8) NTZZ01QA.

Each NTZZ01QA provides two circuit packs and paddle boards. One circuit pack is mounted in plane 0 (shelf 26). The other circuit pack is mounted in plane 1 (shelf 39).

Assign NTZZ01QA in the following order:
13,14,15...25,26,27.

It is recommended that port assignments proceed from lower number slots toward higher number slots.

- 3) ENET Offices: When the port requirements exceed 128 Messaging Ports for each ENET shelf pair, provide two (2) NTZZ01PA for each additional 64 ports. Two NTZZ01PA provide one NT9X17DA and one NT9X25AA for each of the four port groups. The port groups are defined as follows:

port group 1 = ENET shelf plane 0 / MS0 interface
port group 2 = ENET shelf plane 0 / MS1 interface
port group 3 = ENET shelf plane 1 / MS0 interface
port group 4 = ENET shelf plane 1 / MS1 interface

MS0 and MS1 together can accomodate up to eight (8) NTZZ01PA.

Each NTZZ01PA provides two circuit packs and paddle boards. One circuit pack is mounted in MS0 (shelf 26). The other circuit pack is mounted in MS1 (shelf 39).

Assign NTZZ01PA in the following order:
13,14,15...24,25,26.

It is recommended that port assignments proceed from lower number slots toward higher number slots.

- 4 ENET offices: Assign the ENET ports to the lowest numbered MS slots in ascending order starting from slot 12 (i.e. slots 12, 13, etc.). However, the SAEs and EAEs should anticipate and plan all future growth on each ENET shelf and provision the MS cards accordingly, by leaving a spare slot for future expansion as shown below.

For 64 Ports Requirement

	Front	Rear	
n	NT9X17DA	NT9X20BB	to Plane 0 of ENET
n+1			reserve for future growth

	Front	Rear	
n+2	NT9X17DA	NT9X20BB	to Plane 1 of ENET
n+3			reserve for future growth

For 128 Ports Requirement

	Front	Rear	
n	NT9X17DA	NT9X20BB	to Plane 0 of ENET
n+1	NT9X17DA	NT9X25BA	
n+2			reserve for future growth

	Front	Rear	
n+3	NT9X17DA	NT9X20BB	to Plane 1 of ENET
n+4	NT9X17DA	NT9X25BA	
n+5			reserve for future growth

	Front	Rear	
12	NT9X17DA	NT9X20BB	to Plane 0 of ENET, 192 PORTS
13	NT9X17DA	NT9X25AA	
14	NT9X17DA	NT9X25BA	
15	NT9X17DA	NT9X20BB	to Plane 1 of ENET, 192 PORTS
16	NT9X17DA	NT9X25AA	
17	NT9X17DA	NT9X25BA	

	Front	Rear	
12	NT9X17DA	NT9X20BB	to Plane 0 of ENET, 256 PORTS
13	NT9X17DA	NT9X25AA	
14	NT9X17DA	NT9X25AA	
15	NT9X17DA	NT9X25BA	
16	NT9X17DA	NT9X20BB	to Plane 1 of ENET, 256 PORTS
17	NT9X17DA	NT9X25AA	
18	NT9X17DA	NT9X25AA	
19	NT9X17DA	NT9X25BA	

- RUL7 1) Provide one (1) NTZZ01EA for card slots 12 through 29 (Front and Rear) not equipped with NTZZ01CA, NTZZ01DA, NTZZ01NA, NTZZ01PA, NTZZ01QA, or NTZZ01ZA.

Each NTZZ01EA contains circuit packs and paddle boards for one (1) card slot on shelves 26 and 39. NTZZ01EA can be assigned in card slots from 12 thru 29.

- RUL8 1) Provide one (1) NTZZ01FA CPU CP (for equipping card slots 19F and 20F) for each SuperNode Series 10 office.
- 2) Provide one (1) NTZZ01GA CPU CP (for equipping card slots 19F and 20F) for each SuperNode Series 20 or STP office. The NT9X13BA and NT9X13BB CPU CP are to be replaced by the NTZZ01GA CPU CP at BCS 26. Note that the NT9X13BB is MD and replaced by the NT9X13BC.
- 3) Provide one (1) NTZZ01HA CPU CP (for equipping card slots 19F and 20F) for each SuperNode Series 30 office.
- 4) Provide one (1) NTZZ01JA CPU CP (for card slots 19F and 20F) for each SuperNode Series 40 office. (When UPGRADING from one CPU to another only order the CPU, not the Building Block as this comes with NT9X26ABs)
- 5) Provide one (1) NTZZ01SB BRISC CPU CP (for card slots 19F and 20F). Minimum software release that is required is BCS-BR33.

- 6) When UPGRADING from one CPU to another only order the CPU, not the Building Block, which comes with additional NT9X26ABs.

RUL9 1) Provide one (1) End of Aisle Lamp cable assembly (NT9X0146) for the last cabinet in the line-up. This cable should be provided during the M5 cabling spec. Refer to the CA drawing when this cable is required for end aisle cabling.

- 2) Provide one (1) End of Aisle Lamp cable assembly (NT9X0172) if the spares cabinet (NT9X01FA/NTRX49AA) is located between the NT9X01JB and the end of the line-up. This cable should be provided during the M5 cabling spec. Refer to the CA drawing when this cable is required for end aisle cabling.

RUL10 1) Provide one (1) NT9X9532 stand-alone cabling interface kit when powering the NT9X01JB cabinet from the 7 foot PDC frame, OR powering from the new CPDC (NTRX31CA) cabinet, OR powering from the NTRX31AA or from the NTRX31BA CPDC cabinet which is in the different lineup than the NT9X01JB. This kit includes cables, filters, and miscellaneous mounting hardware.

When an NT9X9532 stand-alone cabling interface kit is required, P0736059 APC cabinet power filter labels are also required. Provide one (1) P0736059 per DPCC Cabinet requiring an NT9X9532 interface kit.

- 2) Provide one (1) NT9X9531 horizontal power cabling interface kit when powering the NT9X01JB cabinet from the NTRX31AA, or from the NTRX31BA CPDC cabinet which is in the same lineup as the NT9X01JB. This kit includes power cables, terminal blocks, and miscellaneous mounting hardware.

When an NT9X9531 horizontal power cabling interface kit is required, a P0737633 DPCC terminal block designation strip is also required. Provide one (1) P0737633 DPCC terminal block designation strip per DPCC requiring the NT9X9531 interface kit.

RUL11 Deleted.

RUL12 1) Provide one (1) NTZZ01ZA (Link Interface to FLIS/APC) to interface to an FLIS in an Enhanced Multi-Purpose Cabinet or an Application/File Processor in an APC Cabinet.

RUL13 1) Deleted

- RUL14 1) Provide an NTEX5022 Cable for Inter-MS link option when interfacing with a fiber link interface shelf (FLIS) for connection between MS0 and MS1 when copper connection is required for DS-30 paddleboards when supernode cabinets are provisioned.
- RUL15 1) Provide an NTEX5023 Cable for Inter-MS link option when interfacing with a fiber link interface shelf (FLIS) for connection between MS0 and MS1 when copper connection is required for DS-30 paddleboards when Cabinetized DMS cabinets are provisioned.
- RUL16 1) Provide A0352268 Cable for Inter-MS link option for connection between MS0 and MS1 when fiber optic connection is required for DS-512 paddleboards. This is not yet verified for FLIS application.
- RUL17 1) Provide two (2) P0736273 Optical Fiber Labels when adding paddleboard that require fiber optic connections. (ie. NT9X20xx etc.)
- 2) Provide two (2) P0736273 Optical Fiber Labels according to customer safety regulations which require labels for SuperNode cabinets provisioned with fiber optic cables.
- RUL18 1) Provide one (1) NT9X6556 MS Bulkhead Interface Left and one (1) NT9X6536 DS-30 Bulkhead Interface Right per MS shelf in NT9X01JB Cabinet for non-Cabinetized DMS (stand-alone) applications.
- 2) Provide one (1) NT9X6546 DS-30 Bulkhead Interface Left and one (1) NT9X6545 DS-30 Bulkhead Interface Right per MS shelf in NT9X01JB Cabinet for Cabinetized DMS (streamline) applications. Also, provide one (1) NTEX5070 Bulkhead cover plate assembly and one (1) A0279319 screw retainer for each unequipped connector position in the NT9X6545 and NT9X6546 Bulkheads per the following formula:

$$\#NTEX5070 = 80 - 16 * (\#NTZZ01UB/VB)$$

- RUL19 1) Deleted.
- RUL20 1) Deleted.
- RUL21 1) Deleted.
- RUL22) 1) Deleted.

RUL23) 1) Provide one (1) NT9X0324 ESP Ground Terminator Assembly in all British telephone system.

SUPERNODE S/DMS WITH VARIABLE MEMORY ON MS

PEC CODE: NTZZ01RM

CPC CODE: B0236380

RATING: MD.

REPLACES: Not Applicable

REPLACED BY: NTZZ01RC

ABBREVIATION NAME: SN

ENGINEERING DESCRIPTION: This BB is replaced with NTZZ01RC & being MD'ed in Oct.'93. The System Node Cabinet and Common CP contains the shelf assemblies, bulkheads, circuit packs and miscellaneous items that are always required for a SuperNode. The amount of memory provisioned on the message switch depends on the application.

REFERENCE DOCUMENTATION: SLZZ01RM 00 02
NTZZ01RM REL 01
MS9X01JB 01 10

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA
Carrier

ISSUE AUTHOR: NTC: Kirit Patel DEPT. S646 (BRW)

MAIN CONTACT: NTC: Kirit Patel DEPT. S646 (BRW)

NTZZ01RM EMC4-05-005 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 07 12	ECM 626 09	ET16699 (Add NTZZ01CB/DB/UB/VB). ET29583, Add RUL1. Correct Misc Errors ET. # 17109, see main body history. MD this BB, replaced by NTZZ01RC to solve ET17229/ET17299
93 10 20	ECM 626 11	

The SuperNode Cabinet and Common CP is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Dual Plane Com Core Cab	NT9X01JB		1			AP
Frame Supervisory Panel	NT9X03AA	FSP		52		AP
Common Cabinet Equipment	NT9X95AA		1			AP-01
End of Aisle Lamp Cable	NT9X0146					RUL7
End of Aisle Lamp Cable	NT9X0172					RUL7
Msg Sw Shelf Assembly	NT9X0440	MS	2	26, 39		AP-01
-5V 20A Converter	NT9X31AA		4	26, 39	1F, 33F	AP
+5V 80A Converter	NT9X30AA		4	26, 39	4F, 36F	AP
MS T-Bus Terminator CP	NT9X52AA		2	26, 39	7F	AP
Combined Clock CP	NT9X53AC		2	26, 39	8F	AP
Des Label (NT9X53AC)	P0726965		2	26, 39	8F	AP
CPU 16 MHZ CP(4 MB)	NT9X13DC		2	26, 39	9F	RUL17
Des Label (NT9X13DC)	P0696240		2	26, 39	9F	RUL17
CPU 16 MHZ CP(16 MB)	NT9X13DD		2	26, 39	9F	RUL17
Des Label (NT9X13DD)	P0743628		2	26, 39	9F	RUL17
Filler Circuit Pack	NT9X19AA		2	26, 39	10F	RUL18
Filler Paddleboard CP	NT9X19BA		2	26, 39	10R	RUL18
6 MB Memory CP	NT9X14BB		2	26, 39	10F	RUL18
Des Label (NT9X14BB)	P0689619		2	26, 39	10F	RUL18
24 MB Memory CP	NT9X14DB		2	26, 39	10F	RUL18
Mapper CP	NT9X15AA		2	26, 39	11F	RUL23
4 Port Network & IOC I/F	NTZZ01CB			26	28F, 26F 24F, 22F 20F, 18F 16F, 14F 12F	RUL4
4 Port LIM/LPP Interface	NTZZ01DB			26	26F, 24F 22F, 20F 18F, 16F 14F, 12F	RUL4
Streamline 4 Port Network & IOC I/F	NTZZ01UB			26	28F, 26F 24F, 22F 20F, 18F 16F, 14F 12F	RUL4
Streamline 4 Port LIM/LPP Interface	NTZZ01VB			26	26F, 24F 22F, 20F 18F, 16F 14F, 12F	RUL4
Initial ENET I/F	NTZZ01NA			26	27F-12F	RUL4
Intermediate ENET I/F	NTZZ01PA			26	26F-13F	RUL4
Final ENET I/F	NTZZ01QA			26	27F-13F	RUL4
Link Interface for FLIS	NTZZ01ZA			26, 39	12F-27F	RUL10

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
I/F Filler Face Plate	NTZZ01EA			26	12F-29F	RUL5
MS 4-Port CP	NT9X17AD		4	26, 39	30F, 31F	AP
MS P-Bus Terminator CP	NT9X49CB		2	26, 39	32F	AP
Des Label (NT9X49CB)	P0697532		2	26, 39	32F	AP
MS Loading Paddle Board	NT9X32AA		4	26, 39	7R, 10R	AP
Subsystem Clock PB (Ext I/F)	NT9X54AC		2	26, 39	8R	AP
Des Label (NT9X54AC)	P0705005		2	26, 39	8R	AP
Remote Term I/F Curr Loop	NT9X26AB		2	26, 39	9R	AP
Desig. Label(NT9X26AB)	P0705003		2	26, 39	9R	AP
PB Filler Face Plate	NT9X19BA		4	26, 39	11R, 32R	AP
DS-512 PB	NT9X20AA		4	26, 39	30R-31R	AP
Shelf CP Fill Front Label	P0698334		2	26, 39		AP
Shelf CP Fill Rear Label	P0690632		2	26, 39		AP
MS Blkhd I/F (Left)	NT9X6556		2	26, 39		RUL16
DS30 Blkhd I/F (Right)(DMS)	NT9X6536		2	26, 39		RUL16
DS30 Blkhd I/F (Right)(DMS)	NT9X6545		2	26, 39		RUL16
(Streamline)						
DS30 Blkhd I/F (Left) (DMS)	NT9X6546		2	26, 39		RUL16
(Streamline)						
Bulkhead coverplate assy.	NTEX5070			26, 39		RUL16
Screw Retainer	A0279319			26, 39		RUL16
Coax Ca Assy (NT9X54AC/AD)	NT9X0192		4	26, 39		AP-01
Composite Clk CA Assy	NT9X0175		2	26, 39		AP-01
Inter-MS DS-30 Cable Assy	NTEX5022			26, 39		RUL12
Inter-MS DS-30 Cable Assy	NTEX5023			26, 39		RUL13
Fiber Optic Cable	A0352268			26, 39		RUL14
Optical Fiber Label(Eng.)	P0736273			39, 26, 13		RUL15
Comp Mod Duplex Sh Assy	NT9X0605	CM	1	13		AP-01
Comp Mod Duplex Comm CP	NT9X06AD		1	13		AP
-5V 20A Power Conv.	NT9X31AA		2	13	1F, 33F	AP-03
+5V 80A Power Conv.	NT9X30AA		2	13	4F, 36F	AP-03
6MB Memory	NTZZ01KA			13	16F-7F	RUL2
24MB Memory	NTZZ01LA			13	16F-7F	RUL2
Filler Face Plate	NTZZ01MA			13	16F-7F	RUL3
CPU Port CP	NT9X12AC		4	13	17F-18F	AP
					21F-22F	
Des Label (NT9X12AC)	P0727356		4	13	17F, 18F	AP
					21F, 22F	
CPU Processor CP	NT9X13BA			13	19F	RUL6
CPU Processor CP	NT9X13BB			13	19F	RUL6
Supernode Series 10 CPU CP	NTZZ01FA			13	19F	RUL6
Supernode Series 20 CPU CP	NTZZ01GA			13	19F	RUL6
Supernode Series 30 CPU CP	NTZZ01HA			13	19F	RUL6
Supernode Series 40 CPU CP	NTZZ01JA			13	19F	RUL6

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Supernode BRISC CPU	NTZZ01SA			13	19F	RUL6
CM Bus Terminator	NT9X21AA		2	13	7R, 32R	AP-03
Filler Face Plate	NT9X19BA			13	8R, 31R	RUL1
PB Filler Face Plate	NT9X19BA		14	13	9R-15R	AP
					24R-30R	
Subsystem Clock	NT9X22CA		2	13	16R, 23R	AP-03
DS512 PB	NT9X20AA		4	13	17R-18R	AP-03
					21R-22R	
Shelf CP Fill Front Label	P0700719		1	13		AP-03
Shelf CP Fill Rear Label	P0678438		1	13		AP-03
Cable Bulkhead (right)	NT9X6539		1	13		AP
Cable Bulkhead (left)	NT9X6540		1	13		AP
RS232C & Curr Loop Ca Assy	NT9X0196		2	13		AP
CM SLM Ext Shelf Assy	NT9X0702	SLM	1	00		AP-01
SLM Common Module	NTZZ01BA			00		RUL1
Filler Packfill	NT9X01FB			00		RUL1
System Load Module II	NT9X44AB			00	8F, 24F	RUL1
Cooling Unit	NT9X95CU					AP
Stand-alone Power Cab. kit	NT9X9532					RUL8
Horizontal Power Cab.kit	NT9X9531					RUL8
Miscellaneous H/W, Grey	NTZZ30JA		1	39		RUL9
Miscellaneous H/W, Brown	NTZZ30KA		1	39		RUL9
Cable Trough (Brown)	NT0X24BH		1			RUL19
Cable Trough (Gray)	NT0X25AX		1			RUL19
Warning Label, English	P0675709		8			RUL20
"Do Not Step"						
Warning Label, Eng/Fr.	P0689135		8			RUL20
"Do Not Step"						
Terminal Block Desig. Strip	P0737633		1			RUL21
APC Cab. Power Filter Labels	P0736059		1			RUL21
ESP Ground Terminator Assy.	NT9X0324		1			RUL22

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

- AP 1) When PEC NTZZ01RM is ordered, these items are provided.
- AP-01 1) This PEC is always provided on the NT9X01JB cabinet, and is indicated here for completeness.
- AP-02 1) Reserved for future use.
- AP-03 1) This PEC is always provided on the NT9X06AD CM Common CP, and is indicated here for completeness.
- RUL1 1) When the System Load Module (SLM) is a requirement, provide one (1) NTZZ01BA SLM Common fill and two (2) NT9X44AB SLM II units.
- SLM II requires software package NTXE54AA. The Device Independent Recording Package(DIRP) on SLM is optional, and it is activated internally by the presence of package module DIRPSLM in NTXJ44AA - SLM File System.
- 2) When the SLM is not a requirement, provide one (1) Filler Packfill NT9X01FB at shelf position 00, and two (2) Filler Face Plates, NT9X19BA, in shelf position 13 for card slots 8R, 31R to satisfy the forced air cooling requirements of the frame.

RUL2 1) Provision one (1) 24Mb Memory Circuit Packs, NTZZ01LA, for each 24Mb increment of memory required. A reminder that in addition to the operational memory provisioned, one extra memory CP must be provided per plane to be assigned as a reliability spare. The NTZZ01KA 6 MByte CP will be provisioned for STP offices only.

2) All offices must equip the Memory CP to the following algorithm: Starting with 24 MByte CP for mixed offices, Slot 16F, 15F, 14F, 13F, 12F, 11F, 10F, 09F, 08F, 07F

RUL3 1) Provision one (1) NTZZ01MA, Filler Face Plate in card slots (16F-07F) per the algorithm in RUL2, not equipped with a memory circuit pack.

RUL4 1) Provide up to nine (9) NTZZ01CB to interface Network and IOC per the following formula,
$$\#NTZZ01CB = \{(\#NM/4) + (\#IOC/8)\} \text{ rounded up to the next int.}$$

Each NM requires total of two ports. Each port must be on an adjacent slot. (one port out of 4 ports from each slot)
Each IOC requires one port out of four ports.

IOC:00 and IOC:01 have fixed assignments to MS CP position 29 port 0 and MS CP position 28 port 0 respectively. In addition it is recommended that port assignments proceed from higher number slots toward lower number slots. Each NTZZ01CB contains circuit packs and paddle boards for two (2) consecutive card slots on shelves 26 and 39. Assign NTZZ01CB in the following order; Slots 28, 26, 24, 22, 20, 18, 16, 14, 12

2) Provide up to eight (8) NTZZ01DB to interface the LIM/LPP per the following formula,

$$\# NTZZ01DB = \{ \# \text{ Link Interface Module Cabinets} / 2 \}$$

to be rounded up to the next integer.

It is recommended that port assignments proceed from higher number slots toward lower number slots. One (1) NTZZ01CB is required for STP applications to interface Network & IOC Modules. Each NTZZ01DB contains circuit packs and paddle boards for two (2) consecutive card slots on shelves 26 and 39. Assign NTZZ01DB in the following order; Slots 26, 24, 22, 20, 18, 16, 14, 12.

- 3) NT9X0145 cables are assigned from the NT9X23__ PBs to the DS_30 Bulkheads as follows:

FROM CONNECTOR P2 OF NT9X23__ IN PB POSITION	TO	
	CONN DESIG	BULKHEAD DESIGNATION
12R 13R 14R 15R 16R 17R 18R 19R 20R	A B C D E F G H I	DS30 BULKHEAD INTERFACE (RIGHT) NT9X6536
21R 22R 23R 24R 25R 26R 27R 28R 29R	G H I D E F A B C	DS30 BULKHEAD INTERFACE (LEFT) NT9X6556

- 4) Provide up to five (5) NTZZ01UB to interface Network and IOC per the following formula:

$$\#NTZZ01UB = \{(\#NM/4) + (\#IOC/8)\}$$
rounded up to the next int.

Each NM requires total of two ports. Each port must be on an adjacent slot.(one port out of 4 ports from each slot)
Each IOC requires one port out of four ports.

IOC:00 and IOC:01 have fixed assignments to MS CP position 29 port 0 and MS CP position 28 port 0 respectively. In addition it is recommended that port assignments proceed from higher number slots toward lower number slots. Each NTZZ01UB contains circuit packs and paddle boards for two (2) consecutive card slots on shelves 26 and 39. Assign NTZZ01UB in the following order; Slots 28, 26,24,22,20 (Applications needing additional ports will require ENET)

- 5) Provide up to four (4) NTZZ01VB to interface the LIM/LPP per the following formula:

NTZZ01VB = {# Link Interface Module Cabinets / 2 }
to be rounded up to the next integer.

It is recommended that port assignments proceed from higher number slots toward lower number slots. One (1) NTZZ01VB is required for STP applications to interface Network & IOC Modules. Each NTZZ01VB contains circuit packs and paddle boards for two (2) consecutive card slots on shelves 26 and 39. Assign NTZZ01VB in the following order; Slots 26, 24, 22, 20 (Applications needing additional ports will require ENET)

- 6) NT9X6544 cables are assigned from the NT9X23__ PBs to the DS_30 Bulkheads per the following:

CONNECT	FROM			TO	
CONNECTOR DESIGNATION	CARD SLOT	PORT	CONN	CONN DESIG	BULKHEAD DESIGNATION
(P2) ON NT9X23-- (DS30 4 PORT) CIRCUIT PACK	20R	0	P0	A0	DS30 BULKHEAD INTERFACE (RIGHT) REFERENCE NT9X6545
	20R	1	P1	A1	
	20R	2	P2	A2	
	20R	3	P3	A3	
	21R	0	P0	B0	
	21R	1	P1	B1	
	21R	2	P2	B2	
	21R	3	P3	B3	
	22R	0	P0	C0	
	22R	1	P1	C1	
	22R	2	P2	C2	
	22R	3	P3	C3	
	23R	0	P0	D0	
	23R	1	P1	D1	
	23R	2	P2	D2	
	23R	3	P3	D3	
	24R	0	P0	E0	
	24R	1	P1	E1	
	24R	2	P2	E2	
	24R	3	P3	E3	
	25R	0	P0	E0	DS30 BULKHEAD INTERFACE (LEFT) REFERENCE NT9X6546
	25R	1	P1	E1	
	25R	2	P2	E2	
	25R	3	P3	E3	
	26R	0	P0	D0	
	26R	1	P1	D1	
	26R	2	P2	D2	
	26R	3	P3	D3	
	27R	0	P0	C0	
	27R	1	P1	C1	
	27R	2	P2	C2	
	27R	3	P3	C3	
	28R	0	P0	B0	
	28R	1	P1	B1	
	28R	2	P2	B2	
	28R	3	P3	B3	
	29R	0	P0	A0	
	29R	1	P1	A1	
	29R	2	P2	A2	
	29R	3	P3	A3	

- 7) Provide up to four (4) NTZZ01NA, Initial ENET Interface, for the first 64 Messaging Ports on each Port Group (on each ENET shelf). Note that for each ENET shelf one NTZZ01NA must be provisioned. Each NTZZ01NA contains circuit packs and paddle boards for one (1) card slot on shelves 26 and 39. Assign NTZZ01NA in the following order; Slots 12,14,15,...24,25,27. It is recommended that port assignments proceed from lower number slots towards higher number slots.
- 8) Provide up to six (6) NTZZ01PA, Intermediate ENET Interface, if the port group exceeds 128 Messaging Ports (on each ENET shelf). Each NT9X25AA MS Port Expander PB extends the port group in multiples of 64 ports each. Each NTZZ01PA contains circuit packs and paddle boards for one (1) card slot on shelves 26 and 39. Assign NTZZ01PA in the following order; 13,14,15,...24,25,26. It is recommended that port assignments proceed from lower number slots toward higher number slots.
- 9) Provide up to four (4) NTZZ01QA, Final ENET Interface, for the final 64 Messaging Ports on each Port Group (on each ENET shelf). Each NTZZ01QA contains circuit packs and paddle boards for one (1) card slot on shelves 26 and 39. Assign NTZZ01QA in the following order; 13,14,15,...25,26,27. It is recommended that port assignments proceed from lower number slots toward higher number slots.

- 10 Assign the ENET ports to the lowest numbered MS slots in ascending order starting from slot 12 (i.e. slots 12, 13, etc.). However, the SAEs and EAES should anticipate and plan all future growth on each ENET shelf and provision the MS cards accordingly, by leaving a spare slot for future expansion if necessary, as shown below.

For 64 Ports Requirement

	Front	Rear	
n	NT9X17DA	NT9X20BB	to Plane 0 of ENET
n+1			reserve for future growth

	Front	Rear	
n+2	NT9X17DA	NT9X20BB	to Plane 1 of ENET
n+3			reserve for future growth

For 128 Ports Requirement

	Front	Rear	
n	NT9X17DA	NT9X20BB	to Plane 0 of ENET
n+1	NT9X17DA	NT9X25BA	
n+2			reserve for future growth

	Front	Rear	
n+3	NT9X17DA	NT9X20BB	to Plane 1 of ENET
n+4	NT9X17DA	NT9X25BA	
n+5			reserve for future growth

	Front	Rear	
12	NT9X17DA	NT9X20BB	to Plane 0 of ENET, 192 PORTS
13	NT9X17DA	NT9X25AA	
14	NT9X17DA	NT9X25BA	
15	NT9X17DA	NT9X20BB	to Plane 1 of ENET, 192 PORTS
16	NT9X17DA	NT9X25AA	
17	NT9X17DA	NT9X25BA	

	Front	Rear	
12	NT9X17DA	NT9X20BB	to Plane 0 of ENET, 256 PORTS
13	NT9X17DA	NT9X25AA	
14	NT9X17DA	NT9X25AA	
15	NT9X17DA	NT9X25BA	
16	NT9X17DA	NT9X20BB	to Plane 1 of ENET, 256 PORTS
17	NT9X17DA	NT9X25AA	
18	NT9X17DA	NT9X25AA	
19	NT9X17DA	NT9X25BA	

RUL5 1) Provide one (1) NTZZ01EA for card slots 12 through 29 (Front and Rear) not equipped with NTZZ01CA, NTZZ01DA, NTZZ01NA, NTZZ01PA, NTZZ01QA, or NTZZ01ZA. Each NTZZ01EA contains circuit packs and paddle boards for one (1) card slot on shelves 26 and 39. NTZZ01EA can be assigned in card slots from 12 thru 29.

RUL6 1) Provide one (1) NTZZ01FA CPU CP (for equipping card slots 19F and 20F) for each SuperNode Series 10 office. New offices should not be engineered using this PEC. If an existing site is configured with a Series 10 processor, the customer is requested to contact the regional sales representative for details on how to upgrade to a Series 20 processor or higher. See Section 4.1.2 ECM body for software packaging.

2) Provide one (1) NTZZ01GA CPU CP (for equipping card slots 19F and 20F) for each SuperNode Series 20 or STP office. The NT9X13BA and NT9X13BB CPU CP are to be replaced by the NTZZ01GA CPU CP at BCS 26.

3) Provide one (1) NTZZ01HA CPU CP (for equipping card slots 19F and 20F) for each SuperNode Series 30 office.

4) Provide one (1) NTZZ01JA CPU CP (for card slots 19F and 20F) for each SuperNode Series 40 office. (When UPGRADING from one CPU to another only order the CPU, not the Building Block as this comes with NT9X26ABS)

- 5) Provide one (1) NTZZ01SA BRISC CPU CP (for card slots 19F and 20F). Minimum software release that is required is BCS-BR33.
 - 6) When UPGRADING from one CPU to another only order the CPU, not the Building Block as this comes with additional NT9X26ABs. Note the CPU PECs as follows :
 - a) Provide two (2) NT9X13BC CPU (68030 20 MHz) Proc CP in card slots 19F and 20F for SuperNode Series 20 office.
 - b) Provide two (2) NT9X13GA CPU (68030 33 MHz) Proc CP in card slots 19F and 20F for SuperNode Series 30 office.
 - c) Provide two (2) NT9X13HB CPU (68030 40 MHz) Proc CP in card slots 19F and 20F for SuperNode Series 40 office.
- RUL7
- 1) Please refer to CA drawings for U.S Applications and ignore the other parts of rul7.
 - 2) If you have more than two (2) cabinets in the lineup then refer to the CA Drawings.
 - 3) Provide one (1) End of Aisle Lamp cable assembly (NT9X0146) if this is the last cabinet in the line-up.
 - 4) Provide one (1) End of Aisle Lamp cable assembly (NT9X0172) if the spares cabinet (NT9X01FA) is located between the NT9X01JB and the end of the line-up.
- RUL8
- 1) Provide one (1) NT9X9532 stand-alone Cabling Interface Kit when powering the NT9X01JB cabinet from the 7 foot PDC frame OR powering from the new CPDC (NTRX31CA) cabinet, OR powering from the NTRX31AA or from the NTRX31BA CPDC cabinet which is in the different lineup than the NT9X01JB. This kit includes cables, filters, and miscellaneous mounting hardware.
 - 2) Provide one (1) NT9X9531 Horizontal Power Cabling Interface Kit when powering the NT9X01JB cabinet from the NTRX31AA or from the NTRX31BA CPDC cabinet which is in the same lineup as the NT9X01JB. This kit includes power cables, terminal blocks, and miscellaneous mounting hardware.
- RUL9
- 1) Provide one (1) NTZZ30JA, per grey S/N cabinet NT9X01JB. Use only with other grey exterior parts.
 - 2) Provide one (1) NTZZ30KA, per brown S/N cabinet NT9X01JB. Use only with other brown exterior parts.

- RUL10 1) Provide one (1) NTZZ01ZA (Link Interface to FLIS) to interface to a FLIS in a Enhanced Multi-Purpose Cabinet.
- RUL11 1) Reserved.
- RUL12 1) Provide NTEX5022 Cable for Inter-MS link option when interfacing with fiber link interface shelf(FLIS) for connection between MS 0 and MS 1 when copper connection is required for DS-30 paddleboards when supernode cabinets are provisioned.
- 2) This cable assembly is required when a LIM frame is equipped with Network Interface Units (NIU).
- RUL13 1) Provide NTEX5023 Cable for Inter-MS link option when interfacing with fiber link interface shelf(FLIS) for connection between MS 0 and MS 1 when copper connection is required for DS-30 paddleboards when streamline cabinets are provisioned.
- 2) This cable assembly is required when a LIM frame is equipped with Network Interface Units (NIU).
- RUL14 1) Provide A0352268 Cable for Inter-MS link option for connection between MS 0 and MS 1 when fiber optic connection is required for DS-512 paddleboards. This is not yet verified for FLIS application.
- RUL15 1) Provide two (2) P0736273 Optical Fiber Label when adding paddleboard that required fiber optic connections. (ie. NT9X20xx etc.)
- 2) Provide two (2) P0736273 Optical Fiber Labels according to customer safety regulations that indicate that, labels must be affixed to SuperNode cabinets provisioned with fiber optic cables.
- RUL16 1) Provide one (1) NT9X6556 MS Bulkhead Interface Left and one (1) NT9X6536 DS-30 Bulkhead Interface Right per MS shelf in NT9X01JB Cabinet for non-Cabinetized DMS(stand-alone) application.
- 2) Provide one (1) NT9X6546 DS-30 Bulkhead Interface Left and one (1) NT9X6545 DS-30 Bulkhead Interface Right per MS shelf in NT9X01JB Cabinet for Cabinetized DMS(streamline) application. Also Provide one (1) NTEX5070 Bulkhead cover plate assembly and one (1) A0279319 screw retainer for each unequipped connector position in the NT9X6545 and NT9X6546 Bulkheads.

- RUL17 1) Provide one (1) CPU 16MHZ CP (NT9X13DC) in card slot POS 9F in shelf position 26,39 for applications in BCS-29 to BCS 34.
- 2) Provide one (1) CPU 16 MHZ CP (NT9X13DD) in card slot POS 9F in shelf position 26,39 for applications in BCS-35 and higher.
- RUL18 1) Depending on the memory requirements on the Message Switch provide the following. NOTE: the NT9X13DD is NOT COMPATIBLE with the NT9X14BB.
- 2) If a NT9X14BB or NT9X14DB is not used on the message switch, then provide two (2) NT9X19AA to fill the empty slot 10F on shelf 26 and 39.

Memory Required on the Message Switch	Circuit Packs Required Per MS PLANE
10 Meg	(1)NT9X13DC (1)NT9X14BB
16 Meg	(1)NT9X13DD
28 Meg	(1)NT9X13DC (1)NT9X14DB
40 Meg	(1)NT9X13DD (1)NT9X14DB

- RUL19 1) NT0X24BH provides one complete Cable Trough including upper grilles. Quantity one is required per cabinet in all applications except raised floor. This is used with other brown exterior parts.
- 2) NT0X25AX provides one complete Cable Trough including upper grilles. Quantity one is required per cabinet in all applications except raised floor. This is used with other grey exterior parts. (Richardson applications)

- RUL20 1) Provide eight (8) P0675709 per SuperNode Cable Trough (NT0X24BH, NT0X25AX) English Language only.
- 2) Provide eight (8) P0689135 per SuperNode Cable Trough (NT0X24BH, NT0X25AX) Bilingual(Eng/Fr) only.
- RUL21 1) Provide one (1) P0737633 DPCC terminal block designation strip per DPCC when powering the NT9X01JB cabinet in a Cabinetized DMS application.
- 2) Provide one (1) P0736059 APC Cabinet power Filter Labels per DPCC Cabinet, when powering the DPCC cabinet in a non-Cabinetized DMS application.
- RUL22 1) Provide one (1) NT9X0324 ESP Ground Terminator Assembly in all British Telephone systems.
- RUL23 1) Provide one (1) Mapper CP (NT9X15AA) in card slot POS 11F in shelf position 26,39.

SUPERNODE IN C42(S/DMS) CABINET - BCS34 AND ABOVE

PEC CODE: NTZZ01RB

| CPC CODE: B0237707

| RATING: MD

REPLACES: Not Applicable

| REPLACED BY: NTZZ01RD

ABBREVIATION NAME: DPCC

ENGINEERING DESCRIPTION: The SuperNode in C42(S/DMS) Cabinet contains the shelf assemblies, bulkheads, circuit packs and miscellaneous items that are always required for a SuperNode.

REFERENCE DOCUMENTATION: SLZZ01RB 00 02
NTZZ01RB REL 02
MS9X01JB 01 10
MS9X95BA 00 01
MSRX73 00 03

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA
Carrier
Wireless

ISSUE AUTHOR: NTI: Scott Maggiolo Dept. 3471 (PPK)

MAIN CONTACT: NTI: Scott Maggiolo Dept. 3471 (PPK)

NTZZ01RB EMC4-05-007 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 11 18	ECM 626 06	New BB with NT9X17AD for BCS34 & Above ET-15569 Ref of NT9X95AA in main sec. Changes due to ECD: # 018-39706.
93 01 29	ECM 626 07	
93 03 18	ECM 626 08	ET. # 26843 - Changes to RUL8.
93 07 12	ECM 626 09	ET. # 16829, see main body history.
		ET. # 17109, see main body history.
93 10 20	ECM 626 11	Service Call Summary, QL300082, to update RUL6, Subrule 6 to add PECs for Processor upgrade.
94 01 21	ECM 626 13	NT9X14EA and NT9X26DB addition to Rules 2 and 6
94 02 15	ECM 626 14	ET18489 and ET18479 Labels added for 9X10AA/9X26DB
94 03 10	ECM 626 15	Introduce ECDs 018-41431, 024-89249, 024-89383.
94 04 19	ECM 626 16	Retire Section.

The SuperNode in C42(S/DMS) Cabinet in Building Block is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Dual Plane Com Core Cab	NT9X01JB		1			AP
Frame Supervisory Panel	NT9X03AA	FSP		52		AP
C42 Cabinet Mechanical Assy	NT9X95BA		1			AP-01
End of Aisle Lamp Cable	NT9X0146					RUL7
End of Aisle Lamp Cable	NT9X0172					RUL7
Msg Sw Shelf Assembly	NT9X0440	MS	2	26, 39		AP-01
-5V 20A Converter	NT9X31AA		4	26, 39	1F, 33F	AP
+5V 80A Converter	NT9X30AA		4	26, 39	4F, 36F	AP
MS T-Bus Terminator CP	NT9X52AA		2	26, 39	7F	AP
Combined Clock CP	NT9X53AC		2	26, 39	8F	AP
Des Label (NT9X53AC)	P0726965		2	26, 39	8F	AP
CPU 16 MHZ CP	NT9X13DC		2	26, 39	9F	AP
Des Label (NT9X13DC)	P0696240		2	26, 39	9F	AP
6 MB Memory CP	NT9X14BB		2	26, 39	10F	AP
Des Label (NT9X14BB)	P0689619		2	26, 39	10F	AP
Mapper CP	NT9X15AA		2	26, 39	11F	AP
4 Port Network & IOC I/F (non-Cabinetized DMS)	NTZZ01CB			26	28F, 26F 24F, 22F 20F, 18F 16F, 14F 12F	RUL4
4 Port LIM/LPP Interface (non-Cabinetized DMS)	NTZZ01DB			26	26F, 24F 22F, 20F 18F, 16F 14F, 12F	RUL4
4 Port Network & IOC I/F (Cabinetized DMS)	NTZZ01UB			26	28F, 26F 24F, 22F 20F, 18F 16F, 14F 12F	RUL4
4 Port LIM/LPP Interface (Cabinetized DMS)	NTZZ01VB			26	26F, 24F 22F, 20F 18F, 16F 14F, 12F	RUL4
Initial ENET I/F	NTZZ01NA			26	27F-12F	RUL4
Intermediate ENET I/F	NTZZ01PA			26	26F-13F	RUL4
Final ENET I/F	NTZZ01QA			26	27F-13F	RUL4
I/F Filler Face Plate	NTZZ01EA			26	12F-29F	RUL5
Link Interface for FLIS	NTZZ01ZA			26, 39	27F-12F	RUL10
MS 4-Port CP	NT9X17AD		4	26, 39	30F, 31F	AP
Des Label (NT9X17AD)	P0735096		4	26, 39	30F, 31F	AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
MS P-Bus Terminator CP	NT9X49CB		2	26,39	32F	AP
Des Label (NT9X49CB)	P0697532		2	26,39	32F	AP
MS Loading Paddle Board	NT9X32AA		4	26,39	7R,10R	AP
Subsystem Clock PB (Ext I/F)	NT9X54AC		2	26,39	8R	AP
Des Label (NT9X54AC)	P0705005		2	26,39	8R	AP
Remote Term I/F Curr Loop	NT9X26AB		2	26,39	9R	AP
Desig. Label(NT9X26AB)	P0705003		2	26,39	9R	AP
PB Filler Face Plate	NT9X19BA		4	26,39	11R,32R	AP
DS-512 PB	NT9X20AA		4	26,39	30R-31R	AP
Shelf CP Fill Front Label	P0698334		2	26,39		AP
Shelf CP Fill Rear Label	P0690632		2	26,39		AP
MS Blkhd I/F (Left) (DMS-100)	NT9X6556		2	26,39		RUL16
MS Blkhd I/F (Right) (DMS-100)	NT9X6536		2	26,39		RUL16
DS30 Blkhd I/F (Left) (Cabinetized DMS)	NT9X6546		2	26,39		RUL16
DS30 Blkhd I/F (Right) (Cabinetized DMS)	NT9X6545		2	26,39		RUL16
Bulkhead coverplate assy.	NTEX5070			26,39		RUL16
Screw Retainer	A0279319			26,39		RUL16
Coax Ca Assy (NT9X54AC)	NT9X0192		4	26,39		AP-01
Composite Clk CA Assy	NT9X0175		2	26,39		AP-01
Inter-MS DS-30 Cable Assy	NTEX5022			26,39		RUL12
Inter-MS DS-30 Cable Assy	NTEX5023			26,39		RUL13
Fiber Optic Cable	A0352268			26,39		RUL14
Optical Fiber Label(Eng.)	P0736273			39,26,13		RUL15
Comp Mod Duplex Sh Assy	NT9X0605	CM	1	13		AP-01
-5V 20A Power Conv.	NT9X31AA		2	13	1F,33F	AP
+5V 80A Power Conv.	NT9X30AA		2	13	4F,36F	AP
6MB Memory	NTZZ01KA			13	16F-7F	RUL2
24MB Memory	NTZZ01LA			13	16F-7F	RUL2
96MB Memory	NT9X14EA			13	16F-7F, 32F-23F	RUL2
Designation Label (NT9X14EA)	P0736863			13	16F-7F, 32F-23F	RUL2
Filler Face Plate	NTZZ01MA			13	16F-7F	RUL3
CPU Port CP	NT9X12AC		4	13	17F-18F 21F-22F	AP
Des Label (NT9X12AC)	P0727356		4	13	17F,18F 21F,22F	AP
CPU Processor CP	NT9X13BA			13	19F	RUL6
CPU Processor CP	NT9X13BB			13	19F	RUL6
Supernode Series 10 CPU CP	NTZZ01FA			13	19F	RUL6

NTZZ01RB

Retired Equipment

EMC4-05-007

SuperNode in C42(S/DMS) Cabinet - BCS34 AND ABOVE

Page 4

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Supernode Series 20 CPU CP	NTZZ01GA			13	19F	RUL6
Supernode Series 30 CPU CP	NTZZ01HA			13	19F	RUL6
Supernode Series 40 CPU CP	NTZZ01JA			13	19F	RUL6
Supernode BRISC CPU	NTZZ01SA			13	19F	RUL6
BRISC RTIF PB	NT9X26DB			13	19R, 20R	RUL6
Designation Label (NT9X26DB)	P0747896			13	19R, 20R	RUL6
Designation Label (NT9X10AA)	P0734152			13	19F, 20F	RUL6
33 MHz 88000 BRISC CPU CP	NT9X10AA			13	19F, 20F	RUL6
CM Bus Terminator	NT9X21AA		2	13	7R, 32R	AP
Filler Face Plate	NT9X19BA			13	8R, 31R	RUL1
PB Filler Face Plate	NT9X19BA		14	13	9R-15R	AP
					24R-30R	
Subsystem Clock	NT9X22CA		2	13	16R, 23R	AP
DS512 PB	NT9X20AA		4	13	17R-18R	AP
					21R-22R	
Shelf CP Fill Front Label	P0700719		1	13		AP
Shelf CP Fill Rear Label	P0678438		1	13		AP
Cable Bulkhead (right)	NT9X6539		1	13		AP
Cable Bulkhead (left)	NT9X6540		1	13		AP
RS232C & Curr Loop Ca Assy	NT9X0196		2	13		AP
CM SLM Ext Shelf Assy	NT9X0702	SLM	1	00		AP-01
SLM Common Module	NTZZ01BA			00		RUL1
Filler Packfill	NT9X01FB			00		RUL1
System Load Module II	NT9X44AB			00	8F, 24F	RUL1
Cooling Unit	NT9X95CU					AP
Stand-alone Power Cab. kit (for non-Cabinetized Appl.)	NT9X9532					RUL8
Horizontal Power Cab.kit (for Cabinetized Appl.)	NT9X9531					RUL8
Frame Fail Lamp (Grey)	NT0X24CN		1			RUL9
Rear Frame Fail Light(Grey)	P0699441		1			RUL9
Frame Fail Lamp (Brown)	NT0X24BT		1			RUL9
Rear Frame Fail Light(Brown)	P0674502		1			RUL9
Terminal Block Desig. Strip	P0737633		1			RUL20
APC Cab. power Filter Labels	P0736059		1			RUL20
ESP Ground Terminator Assy.	NT9X0324		1			RUL21
C42 Cabinet Mechanical Assy	NT9X95BA					NOTE3

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) NTXF27AA - Cesium, Loran Composite Master. For offices requiring external clock synchronization to Cesium/Rubidium Stratum I standard, provide the NTXF27AA package. Note that this package also supports Loran Composite Master clock source, but the necessary provisionable cable is not yet available for the latter application.
- 2) SLM II requires software package NTXE54AA. The Device Independent Recording Package(DIRP) on SLM is optional, and it is activated internally by the presence of package module DIRPSLM in NTXJ44AA - SLM File System.
- 3) Refer to NT9X95BA(EMA4-07-001) for additional mechanical hardware requirements for C42 Cabinet.

RULES:

- AP 1) When PEC NTZZ01RB is ordered, these items are provided.
- AP-01 1) This PEC is always provided on the NT9X01JB cabinet, and is indicated here for completeness.
- 2) Refer to NT9X95BA(EMA4-07-001) section for additional Mechanical Hardware requirements for C42(S/DMS) Cabinet

- RUL1 1) When the System Load Module (SLM) is a requirement, provide one (1) NTZZ01BA SLM Common fill and two (2) NT9X44AB SLM II units.

SLM II requires software package NTXE54AA. The Device Independent Recording Package(DIRP) on SLM is optional, and it is activated internally by the presence of package module DIRPSLM in NTXJ44AA - SLM File System.

- 2) When the SLM is not a requirement, provide one (1) Filler Packfill NT9X01FB at shelf position 00, and two (2) Filler Face Plates, NT9X19BA, in shelf position 13 for card slots 8R, 31R to satisfy the forced air cooling requirements of the frame.

- RUL2 1) Provision one (1) 24Mb Memory Circuit Packs, NTZZ01LA, for each 24Mb increment of memory required. A reminder that in addition to the operational memory provisioned, one extra memory CP must be provided per plane to be assigned as a reliability spare. The NTZZ01KA 6 MByte CP will be provisioned for STP offices only.

- 2) All offices must equip the Memory CP to the following algorithm: Starting with 24 MByte CP for mixed offices, Slot 16F, 15F, 14F, 13F, 12F, 11F, 10F, 09F, 08F, 07F

- 3) All BRISC Series 50 option offices must utilize NT9X14DB only (BCS-33 and above).

- 4) All BRISC Series 60 option offices must utilize NT9X14EA only (BCS-36 and above). All offices must equip memory CP to the following algorithm : Starting with 1st. slots 16F and 23F, 2nd. 15F and 24F, 3rd. 14F and 25F, 4th. 13F and 26F, 5th. 12F and 27F, 6th. 11F and 28F, 7th. 10F and 29F, 8th. 9F and 30F, 9th. 8F and 31F, 10th 7F and 32F.

- RUL3 1) Provision one (1) NTZZ01MA, Filler Face Plate in card slots (16F-07F) per the algorithm in RUL2, not equipped with a memory circuit pack.

- RUL4 1) Provide up to nine (9) NTZZ01CB to interface Network and IOC per the following formula,
$$\#NTZZ01CB = \{(\#NM/4) + (\#IOC/8)\}$$
 rounded up to the next int.

Each NM requires total of two ports. Each port must be on an adjacent slot.(one port out of 4 ports from each slot)
Each IOC requires one port out of four ports.

IOC:00 and IOC:01 have fixed assignments to MS CP position 29 port 0 and MS CP position 28 port 0 respectively. In addition it is recommended that port assignments proceed from higher number slots toward lower number slots. Each NTZZ01CB contains circuit packs and paddle boards for two (2) consecutive card slots on shelves 26 and 39. Assign NTZZ01CB in the following order; Slots 28, 26, 24, 22, 20, 18, 16, 14, 12

- 2) Provide up to eight (8) NTZZ01DB to interface the LIM/LPP per the following formula,

NTZZ01DB = {# Link Interface Module Cabinets / 2 }
to be rounded up to the next integer.

It is recommended that port assignments proceed from higher number slots toward lower number slots. One (1) NTZZ01CB is required for STP applications to interface Network & IOC Modules. Each NTZZ01DB contains circuit packs and paddle boards for two (2) consecutive card slots on shelves 26 and 39. Assign NTZZ01DB in the following order; Slots 26, 24, 22, 20, 18, 16, 14, 12.

- 3) NT9X0145 cables are assigned from the NT9X23__ PBs to the DS_30 Bulkheads as follows:

FROM CONNECTOR P2 OF NT9X23__ IN PB POSITION	TO	
	CONN DESIG	BULKHEAD DESIGNATION
12R 13R 14R 15R 16R 17R 18R 19R 20R	A B C D E F G H I	DS30 BULKHEAD INTERFACE (RIGHT) NT9X6536
21R 22R 23R 24R 25R 26R 27R 28R 29R	G H I D E F A B C	DS30 BULKHEAD INTERFACE (LEFT) NT9X6556

- 4) Provide up to five (5) NTZZ01UB to interface Network and IOC per the following formula:

#NTZZ01UB = {(#NM/4) + (#IOC/8)} rounded up to the next int.

Each NM requires total of two ports. Each port must be on an adjacent slot.(one port out of 4 ports from each slot)
Each IOC requires one port out of four ports.

IOC:00 and IOC:01 have fixed assignments to MS CP position 29 port 0 and MS CP position 28 port 0 respectively. In addition it is recommended that port assignments proceed from higher number slots toward lower number slots. Each NTZZ01UB contains circuit packs and paddle boards for two (2) consecutive card slots on shelves 26 and 39. Assign NTZZ01UB in the following order; Slots 28, 26,24,22,20 (Applications needing additional ports will require ENET)

- 5) Provide up to four (4) NTZZ01VB to interface the LIM/LPP per the following formula:

NTZZ01VB = {# Link Interface Module Cabinets / 2 }
to be rounded up to the next integer.

It is recommended that port assignments proceed from higher number slots toward lower number slots. One (1) NTZZ01VB is required for STP applications to interface Network & IOC Modules. Each NTZZ01VB contains circuit packs and paddle boards for two (2) consecutive card slots on shelves 26 and 39. Assign NTZZ01VB in the following order; Slots 26, 24, 22, 20 (Applications needing additional ports will require ENET)

- 6) NT9X6544 cables are assigned from the NT9X23__ PBs to the DS_30 Bulkheads per the following:

CONNECT	FROM			TO	
CONNECTOR DESIGNATION	CARD SLOT	PORT	CONN	CONN DESIG	BULKHEAD DESIGNATION
(P2) ON NT9X23-- (DS30 4 PORT) CIRCUIT PACK	20R	0	P0	A0	DS30 BULKHEAD INTERFACE (RIGHT) REFERENCE NT9X6545
	20R	1	P1	A1	
	20R	2	P2	A2	
	20R	3	P3	A3	
	21R	0	P0	B0	
	21R	1	P1	B1	
	21R	2	P2	B2	
	21R	3	P3	B3	
	22R	0	P0	C0	
	22R	1	P1	C1	
	22R	2	P2	C2	
	22R	3	P3	C3	
	23R	0	P0	D0	
	23R	1	P1	D1	
	23R	2	P2	D2	
	23R	3	P3	D3	
	24R	0	P0	E0	
	24R	1	P1	E1	
	24R	2	P2	E2	
	24R	3	P3	E3	
	25R	0	P0	E0	DS30 BULKHEAD INTERFACE (LEFT) REFERENCE NT9X6546
	25R	1	P1	E1	
	25R	2	P2	E2	
	25R	3	P3	E3	
	26R	0	P0	D0	
	26R	1	P1	D1	
	26R	2	P2	D2	
	26R	3	P3	D3	
	27R	0	P0	C0	
	27R	1	P1	C1	
	27R	2	P2	C2	
	27R	3	P3	C3	
	28R	0	P0	B0	
	28R	1	P1	B1	
	28R	2	P2	B2	
	28R	3	P3	B3	
	29R	0	P0	A0	
	29R	1	P1	A1	
	29R	2	P2	A2	
	29R	3	P3	A3	

- 7) Provide up to four (4) NTZZ01NA, Initial ENET Interface, for the first 64 Messaging Ports on each Port Group (on each ENET shelf). Note that for each ENET shelf one NTZZ01NA must be provisioned. Each NTZZ01NA contains circuit packs and paddle boards for one (1) card slot on shelves 26 and 39. Assign NTZZ01NA in the following order; Slots 12,14,15,...24,25,27. It is recommended that port assignments proceed from lower number slots towards higher number slots.
- 8) Provide up to six (6) NTZZ01PA, Intermediate ENET Interface, if the port group exceeds 128 Messaging Ports (on each ENET shelf). Each NT9X25AA MS Port Expander PB extends the port group in multiples of 64 ports each. Each NTZZ01PA contains circuit packs and paddle boards for one (1) card slot on shelves 26 and 39. Assign NTZZ01PA in the following order; 13,14,15,...24,25,26. It is recommended that port assignments proceed from lower number slots toward higher number slots.
- 9) Provide up to four (4) NTZZ01QA, Final ENET Interface, for the final 64 Messaging Ports on each Port Group (on each ENET shelf). Each NTZZ01QA contains circuit packs and paddle boards for one (1) card slot on shelves 26 and 39. Assign NTZZ01QA in the following order; 13,14,15,...25,26,27. It is recommended that port assignments proceed from lower number slots toward higher number slots.

- 10 Assign the ENET ports to the lowest numbered MS slots in ascending order starting from slot 12 (i.e. slots 12, 13, etc.). However, the SAEs and EAES should anticipate and plan all future growth on each ENET shelf and provision the MS cards accordingly, by leaving a spare slot for future expansion if necessary, as shown below.

For 64 Ports Requirement

	Front	Rear	
n	NT9X17DA	NT9X20BB	to Plane 0 of ENET
n+1			reserve for future growth

	Front	Rear	
n+2	NT9X17DA	NT9X20BB	to Plane 1 of ENET
n+3			reserve for future growth

For 128 Ports Requirement

	Front	Rear	
n	NT9X17DA	NT9X20BB	to Plane 0 of ENET
n+1	NT9X17DA	NT9X25BA	
n+2			reserve for future growth

	Front	Rear	
n+3	NT9X17DA	NT9X20BB	to Plane 1 of ENET
n+4	NT9X17DA	NT9X25BA	
n+5			reserve for future growth

	Front	Rear	
12	NT9X17DA	NT9X20BB	to Plane 0 of ENET, 192 PORTS
13	NT9X17DA	NT9X25AA	
14	NT9X17DA	NT9X25BA	
15	NT9X17DA	NT9X20BB	to Plane 1 of ENET, 192 PORTS
16	NT9X17DA	NT9X25AA	
17	NT9X17DA	NT9X25BA	

	Front	Rear	
12	NT9X17DA	NT9X20BB	to Plane 0 of ENET, 256 PORTS
13	NT9X17DA	NT9X25AA	
14	NT9X17DA	NT9X25AA	
15	NT9X17DA	NT9X25BA	
16	NT9X17DA	NT9X20BB	to Plane 1 of ENET, 256 PORTS
17	NT9X17DA	NT9X25AA	
18	NT9X17DA	NT9X25AA	
19	NT9X17DA	NT9X25BA	

RUL5 1) Provide one (1) NTZZ01EA for card slots 12 through 29 (Front and Rear) not equipped with NTZZ01CB, NTZZ01DB, NTZZ01NA, NTZZ01PA, NTZZ01QA, or NTZZ01ZA. Each NTZZ01EA contains circuit packs and paddle boards for one (1) card slot on shelves 26 and 39. NTZZ01EA can be assigned in card slots from 12 thru 29.

RUL6 1) Provide one (1) NTZZ01FA CPU CP (for equipping card slots 19F and 20F) for each SuperNode Series 10 office. New offices should not be engineered using this PEC. If an existing site is configured with a Series 10 processor, the customer is requested to contact the regional sales representative for details on how to upgrade to a Series 20 processor or higher. See Section 4.1.2 ECM body for software packaging.

2) Provide one (1) NTZZ01GA CPU CP (for equipping card slots 19F and 20F) for each SuperNode Series 20 or STP office. The NT9X13BA and NT9X13BB CPU CP are to be replaced by the NTZZ01GA CPU CP at BCS 26.

3) Provide one (1) NTZZ01HA CPU CP (for equipping card slots 19F and 20F) for each SuperNode Series 30 office.

4) Provide one (1) NTZZ01JA CPU CP (for card slots 19F and 20F) for each SuperNode Series 40 office. (When UPGRADING from one CPU to another only order the CPU, not the Building Block as this comes with NT9X26ABS)

- 5) Provide one (1) NTZZ01SA BRISC CPU CP (for card slots 19F and 20F). Minimum software release that is required is BCS-33. Note: When NT9X10AA is equipped with 24 MByte memory, the system is called BRISC Series 50. When the NT9X10AA is equipped with 96 MByte memory, the system is called BRISC Series 60 option. See Rul2. When upgrading to Series 60 option, provide two (2) NT9X26DB BRISC RTIF PB when available in card slots 19R and 20R together with two Designation Labels (NT9X26DB). Minimum software release that is required is BCS-36. For new jobs requiring BRISC Series 60 option, provide two (2) NT9X10AA BRISC CPU CP in card slots 19F and 20F. The new RTIF NT9X26DB will have to be provisioned with this NT9X10AA processor.
 - 6) When UPGRADING from one CPU to another only order the CPU, not the Building Block as this comes with additional NT9X26ABs. Note the CPU PECs as follows :
 - a) Provide two (2) NT9X13BC CPU (68030 20 MHz) Proc CP in card slots 19F and 20F for SuperNode Series 20 office.
 - b) Provide two (2) NT9X13GA CPU (68030 33 MHz) Proc CP in card slots 19F and 20F for SuperNode Series 30 office.
 - c) Provide two (2) NT9X13HB CPU (68030 40 MHz) Proc CP in card slots 19F and 20F for SuperNode Series 40 office.
- RUL7
- 1) Please refer to CA drawings for U.S Applications and ignore the other parts of rul7.
 - 2) If you have more than two (2) cabinets in the lineup then refer to the CA Drawings.
 - 3) Provide one (1) End of Aisle Lamp cable assembly (NT9X0146) if this is the last cabinet in the line-up.
 - 4) Provide one (1) End of Aisle Lamp cable assembly (NT9X0172) if the spares cabinet (NT9X01FA) is located between the NT9X01JB and the end of the line-up. Note that, NT9X01FA has a rate change pending. Use NTRX49AA instead.
- RUL8
- 1) Provide one (1) NT9X9532 stand-alone Cabling Interface Kit when powering the NT9X01JB cabinet from the 7 foot PDC frame OR powering from the new CPDC (NTRX31CA) cabinet, OR powering from the NTRX31AA or from the NTRX31BA CPDC cabinet which is in the different lineup than the NT9X01JB. This kit includes cables, filters, and miscellaneous mounting hardware.

- 2) Provide one (1) NT9X9531 Horizontal Power Cabling Interface Kit when powering the NT9X01JB cabinet from the NTRX31AA or from the NTRX31BA CPDC cabinet which is in the same lineup as the NT9X01JB. This kit includes power cables, terminal blocks, and miscellaneous mounting hardware.
- RUL9 1) Provide one (1) NT0X24BT, Frame Fail Lamp (Brown), and one P0674502, Rear Frame Fail Light, per brown DPCC cabinet NT9X01JB. Use only with other brown exterior parts.
- 2) Provide one (1) NT0X24CN, Frame Fail Lamp (Grey), and one P0699441, Rear Frame Fail Light, per grey DPCC cabinet NT9X01JB. Use only with other grey exterior parts.
- RUL10 1) Provide one (1) NTZZ01ZA (Link Interface to FLIS) to interface to a FLIS in a Enhanced Multi-Purpose Cabinet.
- RUL11 1) Deleted
- RUL12 1) Provide NTEX5022 Cable for Inter-MS link option when interfacing with fiber link interface shelf (FLIS) for connection between MS 0 and MS 1 when copper connection is required for DS-30 paddleboards when supernode cabinets are provisioned.
- 2) This cable assembly is required when a LIM frame is equipped with Network Interface Units (NIU).
- RUL13 1) Provide NTEX5023 Cable for Inter-MS link option when interfacing with fiber link interface shelf (FLIS) for connection between MS 0 and MS 1 when copper connection is required for DS-30 paddleboards when Cabinetized DMS cabinets are provisioned.
- 2) This cable assembly is required when a LIM frame is equipped with Network Interface Units (NIU).
- RUL14 1) Provide A0352268 Cable for Inter-MS link option for connection between MS 0 and MS 1 when fiber optic connection is required for DS-512 paddleboards. This is not yet verified for FLIS application.
- RUL15 1) Provide two (2) P0736273 Optical Fiber Label when adding paddleboard that required fiber optic connections. (ie. NT9X20xx etc.)
- 2) Provide two (2) P0736273 Optical Fiber Labels according to customer safety regulations that indicate that, labels must

be affixed to SuperNode cabinets provisioned with fiber optic cables.

- RUL16 1) Provide one (1) NT9X6556 MS Bulkhead Interface Left and one (1) NT9X6536 DS-30 Bulkhead Interface Right per MS shelf in NT9X01JB Cabinet for non-Cabinetized DMS(stand-alone) application.
- 2) Provide one (1) NT9X6546 DS-30 Bulkhead Interface Left and one (1) NT9X6545 DS-30 Bulkhead Interface Right per MS shelf in NT9X01JB Cabinet for Cabinetized DMS(streamline) application. Also Provide one (1) NTEX5070 Bulkhead cover plate assembly and one (1) A0279319 screw retainer for each unequipped connector position in the NT9X6545 and NT9X6546 Bulkheads.
- RUL17 1) Deleted.
- RUL 18) 1)Deleted.
- RUL19 1) Deleted.
- RUL20) 1) Provide one (1) P0737633 DPCC terminal block designation strip per DPCC when powering the NT9X01JB cabinet in a Cabinetized DMS application.
- 2) Provide one (1) P0736059 APC Cabinet power Filter Labels per DPCC cabinet, when powering the DPCC cabinet in a non-Cabinetized DMS application.
- RUL21) 1) Provide one (1) NT9X0324 ESP Ground Terminator Assembly in all British telephone system.

SUPERNODE S/DMS W/ VAR. MEM. MS - BCS34 & ABOVE

PEC CODE: NTZZ01RC

| CPC CODE: B0239634

| RATING: MD

REPLACES: NTZZ01RM

| REPLACED BY: NTZZ01RD

ABBREVIATION NAME: SN

ENGINEERING DESCRIPTION: The System Node Cabinet and Common CP contains the shelf assemblies, bulkheads, circuit packs and miscellaneous items that are always required for a SuperNode. The amount of memory provisioned on the message switch depends on the application.

REFERENCE DOCUMENTATION: SLZZ01RC 00 01
NTZZ01RC REL 01
MS9X01JB 01 10

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA
Carrier

ISSUE AUTHOR: NTI: Scott Maggiolo Dept. 3471 (PPK)

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NTZZ01RC EMC4-05-008 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 10 20	ECM 626 11	ET17229, ET17299. New BB to allow 9X15AA-AP. Also Service Call QL300082 to update RUL6-SubRUL6 to add Proc.s ET17829, RUL17 update for 13DC PM Note : ZZ01RC Rul18 update. NT9X14EA and NT9X26DB addition to Rules 2 and 6 ET18489 and ET18479 Labels added for 9X10AA/9X26DB Introduce ECDs 018-41431, 024-89249, 024-89383. Retire Section.
93 11 26	ECM 626 12	
94 01 21	ECM 626 13	
94 02 15	ECM 626 14	
94 03 10	ECM 626 15	
94 04 19	ECM 626 16	

The SuperNode Cabinet and Common CP is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Dual Plane Com Core Cab	NT9X01JB		1			AP
Frame Supervisory Panel	NT9X03AA	FSP		52		AP
C42 Cabinet Mechanical Assy	NT9X95BA		1			AP-01
End of Aisle Lamp Cable	NT9X0146					RUL7
End of Aisle Lamp Cable	NT9X0172					RUL7
Msg Sw Shelf Assembly	NT9X0440	MS	2	26, 39		AP-01
-5V 20A Converter	NT9X31AA		4	26, 39	1F, 33F	AP
+5V 80A Converter	NT9X30AA		4	26, 39	4F, 36F	AP
MS T-Bus Terminator CP	NT9X52AA		2	26, 39	7F	AP
Combined Clock CP	NT9X53AC		2	26, 39	8F	AP
Des Label (NT9X53AC)	P0726965		2	26, 39	8F	AP
CPU 16 MHZ CP(4 MB)	NT9X13DC		2	26, 39	9F	RUL17
Des Label (NT9X13DC)	P0696240		2	26, 39	9F	RUL17
CPU 16 MHZ CP(16 MB)	NT9X13DD		2	26, 39	9F	RUL17
Des Label (NT9X13DD)	P0743628		2	26, 39	9F	RUL17
Filler Circuit Pack	NT9X19AA		2	26, 39	10F	RUL18
6 MB Memory CP	NT9X14BB		2	26, 39	10F	RUL18
Des Label (NT9X14BB)	P0689619		2	26, 39	10F	RUL18
24 MB Memory CP	NT9X14DB		2	26, 39	10F	RUL18
Mapper CP	NT9X15AA		2	26, 39	11F	AP
4 Port Network & IOC I/F	NTZZ01CB			26	28F, 26F 24F, 22F 20F, 18F 16F, 14F 12F	RUL4
4 Port LIM/LPP Interface	NTZZ01DB			26	26F, 24F 22F, 20F 18F, 16F 14F, 12F	RUL4
Streamline 4 Port Network & IOC I/F	NTZZ01UB			26	28F, 26F 24F, 22F 20F, 18F 16F, 14F 12F	RUL4
Streamline 4 Port LIM/LPP Interface	NTZZ01VB			26	26F, 24F 22F, 20F 18F, 16F 14F, 12F	RUL4
Initial ENET I/F	NTZZ01NA			26	27F-12F	RUL4
Intermediate ENET I/F	NTZZ01PA			26	26F-13F	RUL4
Final ENET I/F	NTZZ01QA			26	27F-13F	RUL4
Link Interface for FLIS	NTZZ01ZA			26, 39	12F-27F	RUL10
I/F Filler Face Plate	NTZZ01EA			26	12F-29F	RUL5

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
MS 4-Port CP	NT9X17AD		4	26, 39	30F, 31F	AP
Des Label (NT9X17AD)	P0735096		4	26, 39	30F, 31F	AP
MS P-Bus Terminator CP	NT9X49CB		2	26, 39	32F	AP
Des Label (NT9X49CB)	P0697532		2	26, 39	32F	AP
MS Loading Paddle Board	NT9X32AA		4	26, 39	7R, 10R	AP
Subsystem Clock PB (Ext I/F)	NT9X54AC		2	26, 39	8R	AP
Des Label (NT9X54AC)	P0705005		2	26, 39	8R	AP
Remote Term I/F Curr Loop	NT9X26AB		2	26, 39	9R	AP
Desig. Label(NT9X26AB)	P0705003		2	26, 39	9R	AP
PB Filler Face Plate	NT9X19BA		4	26, 39	11R, 32R	AP
DS-512 PB	NT9X20AA		4	26, 39	30R-31R	AP
Shelf CP Fill Front Label	P0698334		2	26, 39		AP
Shelf CP Fill Rear Label	P0690632		2	26, 39		AP
MS Blkhd I/F (Left)	NT9X6556		2	26, 39		RUL16
DS30 Blkhd I/F (Right)(DMS)	NT9X6536		2	26, 39		RUL16
DS30 Blkhd I/F (Right)(DMS)	NT9X6545		2	26, 39		RUL16
(Streamline)						
DS30 Blkhd I/F (Left) (DMS)	NT9X6546		2	26, 39		RUL16
(Streamline)						
Bulkhead coverplate assy.	NTEX5070			26, 39		RUL16
Screw Retainer	A0279319			26, 39		RUL16
Coax Ca Assy (NT9X54AC/AD)	NT9X0192		4	26, 39		AP-01
Composite Clk CA Assy	NT9X0175		2	26, 39		AP-01
Inter-MS DS-30 Cable Assy	NTEX5022			26, 39		RUL12
Inter-MS DS-30 Cable Assy	NTEX5023			26, 39		RUL13
Fiber Optic Cable	A0352268			26, 39		RUL14
Optical Fiber Label(Eng.)	P0736273			39, 26, 13		RUL15
Comp Mod Duplex Sh Assy	NT9X0605	CM	1	13		AP-01
Comp Mod Duplex Comm CP	NT9X06AD		1	13		AP
-5V 20A Power Conv.	NT9X31AA		2	13	1F, 33F	AP-03
+5V 80A Power Conv.	NT9X30AA		2	13	4F, 36F	AP-03
6MB Memory	NTZZ01KA			13	16F-7F	RUL2
24MB Memory	NTZZ01LA			13	16F-7F	RUL2
96MB Memory	NT9X14EA			13	16F-7F,	RUL2
					32F-23F	
Designation Label (NT9X14EA)	P0736863			13	16F-7F,	RUL2
					32F-23F	
Filler Face Plate	NTZZ01MA			13	16F-7F	RUL3
CPU Port CP	NT9X12AC		4	13	17F-18F	AP
					21F-22F	
Des Label (NT9X12AC)	P0727356		4	13	17F, 18F	AP
					21F, 22F	
CPU Processor CP	NT9X13BA			13	19F	RUL6
CPU Processor CP	NT9X13BB			13	19F	RUL6

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Supernode Series 10 CPU CP	NTZZ01FA			13	19F	RUL6
Supernode Series 20 CPU CP	NTZZ01GA			13	19F	RUL6
Supernode Series 30 CPU CP	NTZZ01HA			13	19F	RUL6
Supernode Series 40 CPU CP	NTZZ01JA			13	19F	RUL6
Supernode BRISC CPU	NTZZ01SA			13	19F	RUL6
BRISC RTIF PB	NT9X26DB			13	19R, 20R	RUL6
Designation Label (NT9X26DB)	P0747896			13	19R, 20R	RUL6
Designation Label (NT9X10AA)	P0734152			13	19F, 20F	RUL6
33 MHz 88000 BRISC CPU CP	NT9X10AA			13	19F, 20F	RUL6
CM Bus Terminator	NT9X21AA		2	13	7R, 32R	AP-03
Filler Face Plate	NT9X19BA			13	8R, 31R	RUL1
PB Filler Face Plate	NT9X19BA		14	13	9R-15R	AP
					24R-30R	
Subsystem Clock	NT9X22CA		2	13	16R, 23R	AP-03
DS512 PB	NT9X20AA		4	13	17R-18R	AP-03
					21R-22R	
Shelf CP Fill Front Label	P0700719		1	13		AP-03
Shelf CP Fill Rear Label	P0678438		1	13		AP-03
Cable Bulkhead (right)	NT9X6539		1	13		AP
Cable Bulkhead (left)	NT9X6540		1	13		AP
RS232C & Curr Loop Ca Assy	NT9X0196		2	13		AP
CM SLM Ext Shelf Assy	NT9X0702	SLM	1	00		AP-01
SLM Common Module	NTZZ01BA			00		RUL1
Filler Packfill	NT9X01FB			00		RUL1
System Load Module II	NT9X44AB			00	8F, 24F	RUL1
Cooling Unit	NT9X95CU					AP
Stand-alone Power Cab. kit	NT9X9532					RUL8
Horizontal Power Cab.kit	NT9X9531					RUL8
Frame Fail Lamp (Grey)	NT0X24CN		1			RUL9
Rear Frame Fail Light(Grey)	P0699441		1			RUL9
Frame Fail Lamp (Brown)	NT0X24BT		1			RUL9
Rear Frame Fail Light(Brown)	P0674502		1			RUL9
Terminal Block Desig. Strip	P0737633		1			RUL21
APC Cab. Power Filter Labels	P0736059		1			RUL21
ESP Ground Terminator Assy.	NT9X0324		1			RUL22
C42 Cabinet Mechanical Assy	NT9X95BA					NOTE1

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) Refer to NT9X95BA(EMA4-07-001) for additional mechanical hardware requirements for C42 Cabinet.

RULES:

- AP 1) When PEC NTZZ01RC is ordered, these items are provided.
- AP-01 1) This PEC is always provided on the NT9X01JB cabinet, and is indicated here for completeness.
- 2) Refer to NT9X95BA(EMA4-07-001) section for additional Mechanical Hardware requirements for C42 (S/DMS) Cabinet.
- AP-02 1) Reserved for future use.
- AP-03 1) This PEC is always provided on the NT9X06AD CM Common CP, and is indicated here for completeness.
- RUL1 1) When the System Load Module (SLM) is a requirement, provide one (1) NTZZ01BA SLM Common fill and two (2) NT9X44AB SLM II units.

SLM II requires software package NTXE54AA. The Device Independent Recording Package(DIRP) on SLM is optional, and it is activated internally by the presence of package module DIRPSLM in NTXJ44AA - SLM File System.

- 2) When the SLM is not a requirement, provide one (1) Filler Packfill NT9X01FB at shelf position 00, and two (2) Filler Face Plates, NT9X19BA, in shelf position 13 for card slots 8R, 31R to satisfy the forced air cooling requirements of the frame.
- RUL2 1) Provision one (1) 24Mb Memory Circuit Packs, NTZZ01LA, for each 24Mb increment of memory required. A reminder that in addition to the operational memory provisioned, one extra memory CP must be provided per plane to be assigned as a reliability spare. The NTZZ01KA 6 MByte CP will be provisioned for STP offices only.
- 2) All offices must equip the Memory CP to the following algorithm: Starting with 24 MByte CP for mixed offices, Slot 16F, 15F, 14F, 13F, 12F, 11F, 10F, 09F, 08F, 07F
- 3) All BRISC Series 50 option offices must utilize NT9X14DB only (BCS-33 and above).
- 4) All BRISC Series 60 option offices must utilize NT9X14EA only (BCS-36 and above). All offices must equip memory CP to the following algorithm : Starting with 1st. slots 16F and 23F, 2nd. 15F and 24F, 3rd. 14F and 25F, 4th. 13F and 26F, 5th. 12F and 27F, 6th. 11F and 28F, 7th. 10F and 29F, 8th. 9F and 30F, 9th. 8F and 31F, 10th 7F and 32F.
- RUL3 1) Provision one (1) NTZZ01MA, Filler Face Plate in card slots (16F-07F) per the algorithm in RUL2, not equipped with a memory circuit pack.
- RUL4 1) Provide up to nine (9) NTZZ01CB to interface Network and IOC per the following formula,

$$\#NTZZ01CB = \{(\#NM/4) + (\#IOC/8)\}$$
rounded up to the next int.

Each NM requires total of two ports. Each port must be on an adjacent slot.(one port out of 4 ports from each slot)
Each IOC requires one port out of four ports.

IOC:00 and IOC:01 have fixed assignments to MS CP position 29 port 0 and MS CP position 28 port 0 respectively. In addition it is recommended that port assignments proceed from higher number slots toward lower number slots. Each NTZZ01CB contains circuit packs and paddle boards for two (2) consecutive card slots on shelves 26 and 39. Assign NTZZ01CB in the following order; Slots 28, 26, 24, 22, 20, 18, 16, 14, 12

- 2) Provide up to eight (8) NTZZ01DB to interface the LIM/LPP per the following formula,

$$\# \text{ NTZZ01DB} = \{ \# \text{ Link Interface Module Cabinets} / 2 \}$$

to be rounded up to the next integer.

It is recommended that port assignments proceed from higher number slots toward lower number slots. One (1) NTZZ01CB is required for STP applications to interface Network & IOC Modules. Each NTZZ01DB contains circuit packs and paddle boards for two (2) consecutive card slots on shelves 26 and 39. Assign NTZZ01DB in the following order; Slots 26, 24, 22, 20, 18, 16, 14, 12.

- 3) NT9X0145 cables are assigned from the NT9X23__ PBs to the DS_30 Bulkheads as follows:

FROM CONNECTOR P2 OF NT9X23__ IN PB POSITION	TO	
	CONN DESIG	BULKHEAD DESIGNATION
12R 13R 14R 15R 16R 17R 18R 19R 20R	A B C D E F G H I	DS30 BULKHEAD INTERFACE (RIGHT) NT9X6536
21R 22R 23R 24R 25R 26R 27R 28R 29R	G H I D E F A B C	DS30 BULKHEAD INTERFACE (LEFT) NT9X6556

- 4) Provide up to five (5) NTZZ01UB to interface Network and IOC per the following formula:

$$\#NTZZ01UB = \{(\#NM/4) + (\#IOC/8)\}$$
rounded up to the next int.

Each NM requires total of two ports. Each port must be on an adjacent slot.(one port out of 4 ports from each slot)
Each IOC requires one port out of four ports.

IOC:00 and IOC:01 have fixed assignments to MS CP position 29 port 0 and MS CP position 28 port 0 respectively. In addition it is recommended that port assignments proceed from higher number slots toward lower number slots. Each NTZZ01UB contains circuit packs and paddle boards for two (2) consecutive card slots on shelves 26 and 39. Assign NTZZ01UB in the following order; Slots 28, 26,24,22,20 (Applications needing additional ports will require ENET)

- 5) Provide up to four (4) NTZZ01VB to interface the LIM/LPP per the following formula:

NTZZ01VB = {# Link Interface Module Cabinets / 2 }
to be rounded up to the next integer.

It is recommended that port assignments proceed from higher number slots toward lower number slots. One (1) NTZZ01VB is required for STP applications to interface Network & IOC Modules. Each NTZZ01VB contains circuit packs and paddle boards for two (2) consecutive card slots on shelves 26 and 39. Assign NTZZ01VB in the following order; Slots 26, 24, 22, 20 (Applications needing additional ports will require ENET)

- 6) NT9X6544 cables are assigned from the NT9X23__ PBs to the DS_30 Bulkheads per the following:

CONNECT	FROM			TO	
CONNECTOR DESIGNATION	CARD SLOT	PORT	CONN	CONN DESIG	BULKHEAD DESIGNATION
(P2) ON NT9X23-- (DS30 4 PORT) CIRCUIT PACK	20R	0	P0	A0	DS30 BULKHEAD INTERFACE (RIGHT) REFERENCE NT9X6545
	20R	1	P1	A1	
	20R	2	P2	A2	
	20R	3	P3	A3	
	21R	0	P0	B0	
	21R	1	P1	B1	
	21R	2	P2	B2	
	21R	3	P3	B3	
	22R	0	P0	C0	
	22R	1	P1	C1	
	22R	2	P2	C2	
	22R	3	P3	C3	
	23R	0	P0	D0	
	23R	1	P1	D1	
	23R	2	P2	D2	
	23R	3	P3	D3	
	24R	0	P0	E0	
	24R	1	P1	E1	
	24R	2	P2	E2	
	24R	3	P3	E3	
	25R	0	P0	E0	DS30 BULKHEAD INTERFACE (LEFT) REFERENCE NT9X6546
	25R	1	P1	E1	
	25R	2	P2	E2	
	25R	3	P3	E3	
	26R	0	P0	D0	
	26R	1	P1	D1	
	26R	2	P2	D2	
	26R	3	P3	D3	
	27R	0	P0	C0	
	27R	1	P1	C1	
	27R	2	P2	C2	
	27R	3	P3	C3	
	28R	0	P0	B0	
	28R	1	P1	B1	
	28R	2	P2	B2	
	28R	3	P3	B3	
	29R	0	P0	A0	
	29R	1	P1	A1	
	29R	2	P2	A2	
	29R	3	P3	A3	

- 7) Provide up to four (4) NTZZ01NA, Initial ENET Interface, for the first 64 Messaging Ports on each Port Group (on each ENET shelf). Note that for each ENET shelf one NTZZ01NA must be provisioned. Each NTZZ01NA contains circuit packs and paddle boards for one (1) card slot on shelves 26 and 39. Assign NTZZ01NA in the following order; Slots 12,14,15,...24,25,27. It is recommended that port assignments proceed from lower number slots towards higher number slots.
- 8) Provide up to six (6) NTZZ01PA, Intermediate ENET Interface, if the port group exceeds 128 Messaging Ports (on each ENET shelf). Each NT9X25AA MS Port Expander PB extends the port group in multiples of 64 ports each. Each NTZZ01PA contains circuit packs and paddle boards for one (1) card slot on shelves 26 and 39. Assign NTZZ01PA in the following order; 13,14,15,...24,25,26. It is recommended that port assignments proceed from lower number slots toward higher number slots.
- 9) Provide up to four (4) NTZZ01QA, Final ENET Interface, for the final 64 Messaging Ports on each Port Group (on each ENET shelf). Each NTZZ01QA contains circuit packs and paddle boards for one (1) card slot on shelves 26 and 39. Assign NTZZ01QA in the following order; 13,14,15,...25,26,27. It is recommended that port assignments proceed from lower number slots toward higher number slots.

- 10 Assign the ENET ports to the lowest numbered MS slots in ascending order starting from slot 12 (i.e. slots 12, 13, etc.). However, the SAEs and EAES should anticipate and plan all future growth on each ENET shelf and provision the MS cards accordingly, by leaving a spare slot for future expansion if necessary, as shown below.

For 64 Ports Requirement

	Front	Rear	
n	NT9X17DA	NT9X20BB	to Plane 0 of ENET
n+1			reserve for future growth

	Front	Rear	
n+2	NT9X17DA	NT9X20BB	to Plane 1 of ENET
n+3			reserve for future growth

For 128 Ports Requirement

	Front	Rear	
n	NT9X17DA	NT9X20BB	to Plane 0 of ENET
n+1	NT9X17DA	NT9X25BA	
n+2			reserve for future growth

	Front	Rear	
n+3	NT9X17DA	NT9X20BB	to Plane 1 of ENET
n+4	NT9X17DA	NT9X25BA	
n+5			reserve for future growth

	Front	Rear	
12	NT9X17DA	NT9X20BB	to Plane 0 of ENET, 192 PORTS
13	NT9X17DA	NT9X25AA	
14	NT9X17DA	NT9X25BA	
15	NT9X17DA	NT9X20BB	to Plane 1 of ENET, 192 PORTS
16	NT9X17DA	NT9X25AA	
17	NT9X17DA	NT9X25BA	

	Front	Rear	
12	NT9X17DA	NT9X20BB	to Plane 0 of ENET, 256 PORTS
13	NT9X17DA	NT9X25AA	
14	NT9X17DA	NT9X25AA	
15	NT9X17DA	NT9X25BA	
16	NT9X17DA	NT9X20BB	to Plane 1 of ENET, 256 PORTS
17	NT9X17DA	NT9X25AA	
18	NT9X17DA	NT9X25AA	
19	NT9X17DA	NT9X25BA	

RUL5 1) Provide one (1) NTZZ01EA for card slots 12 through 29 (Front and Rear) not equipped with NTZZ01CA, NTZZ01DA, NTZZ01NA, NTZZ01PA, NTZZ01QA, or NTZZ01ZA. Each NTZZ01EA contains circuit packs and paddle boards for one (1) card slot on shelves 26 and 39. NTZZ01EA can be assigned in card slots from 12 thru 29.

RUL6 1) Provide one (1) NTZZ01FA CPU CP (for equipping card slots 19F and 20F) for each SuperNode Series 10 office. New offices should not be engineered using this PEC. If an existing site is configured with a Series 10 processor, the customer is requested to contact the regional sales representative for details on how to upgrade to a Series 20 processor or higher for BCS-35 and above loads. See Section 4.1.2 ECM body for software packaging.

2) Provide one (1) NTZZ01GA CPU CP (for equipping card slots 19F and 20F) for each SuperNode Series 20 or STP office. The NT9X13BA and NT9X13BB CPU CP are to be replaced by the NTZZ01GA CPU CP at BCS 26.

3) Provide one (1) NTZZ01HA CPU CP (for equipping card slots 19F and 20F) for each SuperNode Series 30 office.

4) Provide one (1) NTZZ01JA CPU CP (for card slots 19F and 20F) for each SuperNode Series 40 office. (When UPGRADING from one CPU to another only order the CPU, not the Building Block as this comes with NT9X26ABs)

- 5) Provide one (1) NTZZ01SA BRISC CPU CP (for card slots 19F and 20F). Minimum software release that is required is BCS-33. Note: When NT9X10AA is equipped with 24 MByte memory, the system is called BRISC Series 50. When the NT9X10AA is equipped with 96 MByte memory, the system is called BRISC Series 60 option. See Rul2. When upgrading to Series 60 option, provide two (2) NT9X26DB BRISC RTIF PB when available in card slots 19R and 20R together with two Designation Labels (NT9X26DB). Minimum software release that is required is BCS-36. For new jobs requiring BRISC Series 60 option, provide two (2) NT9X10AA BRISC CPU CP in card slots 19F and 20F. The new RTIF NT9X26DB will have to be provisioned with this NT9X10AA processor.
 - 6) When UPGRADING from one CPU to another only order the CPU, not the Building Block as this comes with additional NT9X26ABs. Note the CPU PECs as follows :
 - a) Provide two (2) NT9X13BC CPU (68030 20 MHz) Proc CP in card slots 19F and 20F for SuperNode Series 20 office.
 - b) Provide two (2) NT9X13GA CPU (68030 33 MHz) Proc CP in card slots 19F and 20F for SuperNode Series 30 office.
 - c) Provide two (2) NT9X13HB CPU (68030 40 MHz) Proc CP in card slots 19F and 20F for SuperNode Series 40 office.
- RUL7
- 1) Please refer to CA drawings for U.S Applications and ignore the other parts of rul7.
 - 2) If you have more than two (2) cabinets in the lineup then refer to the CA Drawings.
 - 3) Provide one (1) End of Aisle Lamp cable assembly (NT9X0146) if this is the last cabinet in the line-up.
 - 4) Provide one (1) End of Aisle Lamp cable assembly (NT9X0172) if the spares cabinet (NT9X01FA) is located between the NT9X01JB and the end of the line-up.
- RUL8
- 1) Provide one (1) NT9X9532 stand-alone Cabling Interface Kit when powering the NT9X01JB cabinet from the 7 foot PDC frame OR powering from the new CPDC (NTRX31CA) cabinet, OR powering from the NTRX31AA or from the NTRX31BA CPDC cabinet which is in the different lineup than the NT9X01JB. This kit includes cables, filters, and miscellaneous mounting hardware.

- 2) Provide one (1) NT9X9531 Horizontal Power Cabling Interface Kit when powering the NT9X01JB cabinet from the NTRX31AA or from the NTRX31BA CPDC cabinet which is in the same lineup as the NT9X01JB. This kit includes power cables, terminal blocks, and miscellaneous mounting hardware.
- RUL9 1) Provide one (1) NT0X24BT, Frame Fail Lamp (Brown), and one P0674502, Rear Frame Fail Light, per brown DPCC cabinet NT9X01JB. Use only with other brown exterior parts.
- 2) Provide one (1) NT0X24CN, Frame Fail Lamp (Grey), and one P0699441, Rear Frame Fail Light, per grey DPCC cabinet NT9X01JB. Use only with other grey exterior parts.
- RUL10 1) Provide one (1) NTZZ01ZA (Link Interface to FLIS) to interface to a FLIS in a Enhanced Multi-Purpose Cabinet.
- RUL11 1) Reserved.
- RUL12 1) Provide NTEX5022 Cable for Inter-MS link option when interfacing with fiber link interface shelf (FLIS) for connection between MS 0 and MS 1 when copper connection is required for DS-30 paddleboards when supernode cabinets are provisioned.
- 2) This cable assembly is required when a LIM frame is equipped with Network Interface Units (NIU).
- RUL13 1) Provide NTEX5023 Cable for Inter-MS link option when interfacing with fiber link interface shelf (FLIS) for connection between MS 0 and MS 1 when copper connection is required for DS-30 paddleboards when streamline cabinets are provisioned.
- 2) This cable assembly is required when a LIM frame is equipped with Network Interface Units (NIU).
- RUL14 1) Provide A0352268 Cable for Inter-MS link option for connection between MS 0 and MS 1 when fiber optic connection is required for DS-512 paddleboards. This is not yet verified for FLIS application.
- RUL15 1) Provide two (2) P0736273 Optical Fiber Label when adding paddleboard that required fiber optic connections. (ie. NT9X20xx etc.)
- 2) Provide two (2) P0736273 Optical Fiber Labels according to customer safety regulations that indicate that, labels must

be affixed to SuperNode cabinets provisioned with fiber optic cables.

- RUL16 1) Provide one (1) NT9X6556 MS Bulkhead Interface Left and one (1) NT9X6536 DS-30 Bulkhead Interface Right per MS shelf in NT9X01JB Cabinet for non-Cabinetized DMS(stand-alone) application.
- 2) Provide one (1) NT9X6546 DS-30 Bulkhead Interface Left and one (1) NT9X6545 DS-30 Bulkhead Interface Right per MS shelf in NT9X01JB Cabinet for Cabinetized DMS(streamline) application. Also Provide one (1) NTEX5070 Bulkhead cover plate assembly and one (1) A0279319 screw retainer for each unequipped connector position in the NT9X6545 and NT9X6546 Bulkheads.
- RUL17 1) Provide one (1) CPU 16MHZ CP (NT9X13DC) in card slot POS 9F in shelf position 26,39 for applications in BCS-29 and higher BCS.
- 2) Provide one (1) CPU 16 MHZ CP (NT9X13DD) in card slot POS 9F in shelf position 26,39 for applications in BCS-35 and higher. Check availability with PLM/NPPM before ordering.
- 3) Provide one Designation Label corresponding to the card provided.
- RUL18 1) Depending on the memory requirements on the Message Switch provide the following. NOTE: the NT9X13DD is NOT COMPATIBLE with the NT9X14BB.
- 2) If an NT9X14BB or NT9X14DB is not used on the message switch, then provide two (2) NT9X19AA to fill the empty slot 10F on shelf 26 and 39.
- 3) PM Note: New SN DPCCs should not be provided with the NT9X14BB MS memory for BCS-31 and above loads. Also, Offices with Base-04 (CSP-03) or higher require a minimum of 16M of memory and there will be only one common MS load.

Memory Required on the Message Switch	Circuit Packs Required Per MS PLANE
10 Meg	(1)NT9X13DC (1)NT9X14BB

16 Meg	(1)NT9X13DD
28 Meg	(1)NT9X13DC (1)NT9X14DB
40 Meg	(1)NT9X13DD (1)NT9X14DB

RUL19 1) Deleted.

RUL20 1) Deleted.

RUL21 1) Provide one (1) P0737633 DPCC terminal block designation strip per DPCC when powering the NT9X01JB cabinet in a Cabinetized DMS application.

2) Provide one (1) P0736059 APC Cabinet power Filter Labels per DPCC Cabinet, when powering the DPCC cabinet in a non-Cabinetized DMS application.

RUL22 1) Provide one (1) NT9X0324 ESP Ground Terminator Assembly in all British Telephone systems.

SUPERNODE S/DMS - BCS34 & ABOVE

PEC CODE: NTZZ01RD

CPC CODE: B0240938

RATING: Manufacture Discontinued

REPLACES: NTZZ01RB & NTZZ01RC

| REPLACED BY: NTZZ01RE

ABBREVIATION NAME: SN

ENGINEERING DESCRIPTION: The System Node Cabinet and Common CP contains the shelf assemblies, bulkheads, circuit packs and miscellaneous items that are always required for a SuperNode. The amount of memory provisioned on the message switch depends on the application.

REFERENCE DOCUMENTATION: SLZZ01RD 00 01
NTZZ01RD REL 01
MS9X01JB 01 14

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA
Carrier

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NTZZ01RD EMC4-05-009 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 04 19	ECM 626 16	Create Section. Introduce the NT9X53AD clock card. MD the Series 10 Processor. Introduce BBs for NT9X17CAs.
94 05 12	ECM 626 17	Remove IML requirement for NIU on LIM.
94 06 06	ECM 626 18	Retire Section.

The SuperNode Cabinet and Common CP is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Dual Plane Com Core Cab	NT9X01JB		1			AP
Frame Supervisory Panel	NT9X03AA	FSP		52		AP
C42 Cabinet Mechanical Assy	NT9X95BA		1			AP-01
End of Aisle Lamp Cable	NT9X0146					RUL7
End of Aisle Lamp Cable	NT9X0172					RUL7
Msg Sw Shelf Assembly	NT9X0440	MS	2	26, 39		AP-01
-5V 20A Converter	NT9X31AA		4	26, 39	1F, 33F	AP
+5V 80A Converter	NT9X30AA		4	26, 39	4F, 36F	AP
MS T-Bus Terminator CP	NT9X52AA		2	26, 39	7F	AP
MS Ext System Clock I/F CP	NT9X53AB		2	26, 39	8F	RUL19
Combined Clock CP	NT9X53AC		2	26, 39	8F	RUL19
DMS-Bus System Clock CP	NT9X53AD		2	26, 39	8F	RUL19
Des Label (NT9X53AB)	P0705004		2	26, 39	8F	RUL19
Des Label (NT9X53AC)	P0726965		2	26, 39	8F	RUL19
Des Label (NT9X53AD)	P0-----		2	26, 39	8F	RUL19
CPU 16 MHZ CP(4 MB)	NT9X13DC		2	26, 39	9F	RUL17
Des Label (NT9X13DC)	P0696240		2	26, 39	9F	RUL17
CPU 16 MHZ CP(16 MB)	NT9X13DD		2	26, 39	9F	RUL17
Des Label (NT9X13DD)	P0743628		2	26, 39	9F	RUL17
Filler Circuit Pack	NT9X19AA		2	26, 39	10F	RUL18
6 MB Memory CP	NT9X14BB		2	26, 39	10F	RUL18
Des Label (NT9X14BB)	P0689619		2	26, 39	10F	RUL18
24 MB Memory CP	NT9X14DB		2	26, 39	10F	RUL18
Mapper CP	NT9X15AA		2	26, 39	11F	AP
4 Port Network & IOC I/F	NTZZ01CB			26	28F, 26F 24F, 22F 20F, 18F 16F, 14F 12F	RUL4
4 Port LIM/LPP Interface	NTZZ01DB			26	26F, 24F 22F, 20F 18F, 16F 14F, 12F	RUL4
Streamline 4 Port Network & IOC I/F	NTZZ01UB			26	28F, 26F 24F, 22F 20F, 18F 16F, 14F 12F	RUL4
Streamline 4 Port LIM/LPP Interface	NTZZ01VB			26	26F, 24F 22F, 20F 18F, 16F 14F, 12F	RUL4
Initial ENET I/F	NTZZ01NA			26	27F-12F	RUL4

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Intermediate ENET I/F	NTZZ01PA			26	26F-13F	RUL4
Final ENET I/F	NTZZ01QA			26	27F-13F	RUL4
Initial ENET I/F - 128 Port	NTZZ01NM			26	27F-12F	RUL4
Final ENET I/F - 128 Port	NTZZ01QM			26	27F-13F	RUL4
Link Interface for FLIS	NTZZ01ZA			26, 39	12F-27F	RUL10
I/F Filler Face Plate	NTZZ01EA			26	12F-29F	RUL5
MS 4-Port CP	NT9X17AD		4	26, 39	30F, 31F	AP
Des Label (NT9X17AD)	P0735096		4	26, 39	30F, 31F	AP
MS P-Bus Terminator CP	NT9X49CB		2	26, 39	32F	AP
Des Label (NT9X49CB)	P0697532		2	26, 39	32F	AP
MS Loading Paddle Board	NT9X32AA		4	26, 39	7R, 10R	AP
Subsystem Clock PB (Ext I/F)	NT9X54AC		2	26, 39	8R	AP
Des Label (NT9X54AC)	P0705005		2	26, 39	8R	AP
Remote Term I/F Curr Loop	NT9X26AB		2	26, 39	9R	AP
Desig. Label(NT9X26AB)	P0705003		2	26, 39	9R	AP
PB Filler Face Plate	NT9X19BA		4	26, 39	11R, 32R	AP
DS-512 PB	NT9X20AA		4	26, 39	30R-31R	AP
Shelf CP Fill Front Label	P0698334		2	26, 39		AP
Shelf CP Fill Rear Label	P0690632		2	26, 39		AP
MS Blkhd I/F (Left)	NT9X6556		2	26, 39		RUL16
DS30 Blkhd I/F (Right)(DMS)	NT9X6536		2	26, 39		RUL16
DS30 Blkhd I/F (Right)(DMS)	NT9X6545		2	26, 39		RUL16
(Streamline)						
DS30 Blkhd I/F (Left) (DMS)	NT9X6546		2	26, 39		RUL16
(Streamline)						
Bulkhead coverplate assy.	NTEX5070			26, 39		RUL16
Screw Retainer	A0279319			26, 39		RUL16
Coax Ca Assy (NT9X54AC/AD)	NT9X0192		4	26, 39		AP-01
Composite Clk CA Assy	NT9X0175		2	26, 39		AP-01
Inter-MS DS-30 Cable Assy	NTEX5022			26, 39		RUL12
Inter-MS DS-30 Cable Assy	NTEX5023			26, 39		RUL13
Fiber Optic Cable	A0352268			26, 39		RUL14
Optical Fiber Label(Eng.)	P0736273			39, 26, 13		RUL15
Comp Mod Duplex Sh Assy	NT9X0605	CM	1	13		AP-01
Comp Mod Duplex Comm CP	NT9X06AD		1	13		AP
-5V 20A Power Conv.	NT9X31AA		2	13	1F, 33F	AP-03
+5V 80A Power Conv.	NT9X30AA		2	13	4F, 36F	AP-03
6MB Memory	NTZZ01KA			13	16F-7F	RUL2
24MB Memory	NTZZ01LA			13	16F-7F	RUL2
96MB Memory	NT9X14EA			13	16F-12F, 27F-23F	RUL2
Designation Label (NT9X14EA)	P0736863			13	16F-12F, 27F-23F	RUL2
Filler Face Plate	NTZZ01MA			13	16F-7F	RUL3

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
CPU Port CP	NT9X12AC		4	13	17F-18F 21F-22F	AP
Des Label (NT9X12AC)	P0727356		4	13	17F, 18F 21F, 22F	AP
CPU Processor CP	NT9X13BA			13	19F	RUL6
CPU Processor CP	NT9X13BB			13	19F	RUL6
Supernode Series 10 CPU CP	NTZZ01FA			13	19F	RUL6
Supernode Series 20 CPU CP	NTZZ01GA			13	19F	RUL6
Supernode Series 30 CPU CP	NTZZ01HA			13	19F	RUL6
Supernode Series 40 CPU CP	NTZZ01JA			13	19F	RUL6
Supernode BRISC CPU	NTZZ01SA			13	19F	RUL6
BRISC RTIF PB	NT9X26DB			13	19R, 20R	RUL6
Designation Label (NT9X26DB)	P0747896			13	19R, 20R	RUL6
Designation Label (NT9X10AA)	P0734152			13	19F, 20F	RUL6
33 MHZ 88000 BRISC CPU CP	NT9X10AA			13	19F, 20F	RUL6
CM Bus Terminator	NT9X21AA		2	13	7R, 32R	AP-03
Filler Face Plate	NT9X19BA			13	8R, 31R	RUL1
PB Filler Face Plate	NT9X19BA		14	13	9R-15R 24R-30R	AP
Subsystem Clock	NT9X22CA		2	13	16R, 23R	AP-03
DS512 PB	NT9X20AA		4	13	17R-18R 21R-22R	AP-03
Shelf CP Fill Front Label	P0700719		1	13		AP-03
Shelf CP Fill Rear Label	P0678438		1	13		AP-03
Cable Bulkhead (right)	NT9X6539		1	13		AP
Cable Bulkhead (left)	NT9X6540		1	13		AP
RS232C & Curr Loop Ca Assy	NT9X0196		2	13		AP
CM SLM Ext Shelf Assy	NT9X0702	SLM	1	00		AP-01
SLM Common Module	NTZZ01BA			00		RUL1
Filler Packfill	NT9X01FB			00		RUL1
System Load Module II	NT9X44AB			00	8F, 24F	RUL1
Cooling Unit	NT9X95CU					AP
Stand-alone Power Cab. kit	NT9X9532					RUL8
Horizontal Power Cab.kit	NT9X9531					RUL8
Frame Fail Lamp (Grey)	NT0X24CN		1			RUL9
Rear Frame Fail Light(Grey)	P0699441		1			RUL9
Frame Fail Lamp (Brown)	NT0X24BT		1			RUL9
Rear Frame Fail Light(Brown)	P0674502		1			RUL9
Terminal Block Desig. Strip	P0737633		1			RUL21
APC Cab. Power Filter Labels	P0736059		1			RUL21
ESP Ground Terminator Assy.	NT9X0324		1			RUL22
C42 Cabinet Mechanical Assy	NT9X95BA					NOTE1

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) Refer to NT9X95BA(EMA4-07-001) for additional mechanical hardware requirements for C42 Cabinet.

RULES:

- AP 1) When PEC NTZZ01RD is ordered, these items are provided.
- AP-01 1) This PEC is always provided on the NT9X01JB cabinet, and is indicated here for completeness.
- 2) Refer to NT9X95BA(EMA4-07-001) section for additional Mechanical Hardware requirements for C42 (S/DMS) Cabinet.
- AP-02 1) Reserved for future use.
- AP-03 1) This PEC is always provided on the NT9X06AD CM Common CP, and is indicated here for completeness.

- RUL1 1) When the System Load Module (SLM) is a requirement, provide one (1) NTZZ01BA SLM Common fill and two (2) NT9X44AB SLM II units. The SLM II is a hardware requirement for offices ordering NA001 or higher Product Layers.

SLM II requires software package NTXE54AA. The Device Independent Recording Package(DIRP) on SLM is optional, and it is activated internally by the presence of package module DIRPSLM in NTXJ44AA - SLM File System.

- 2) When the SLM is not a requirement, provide one (1) Filler Packfill NT9X01FB at shelf position 00, and two (2) Filler Face Plates, NT9X19BA, in shelf position 13 for card slots 8R,31R to satisfy the forced air cooling requirements of the frame.
- RUL2 1) Provision one (1) 24Mb Memory Circuit Packs, NTZZ01LA, for each 24Mb increment of memory required. A reminder that in addition to the operational memory provisioned, one extra memory CP must be provided per plane to be assigned as a reliability spare. The NTZZ01KA 6 MByte CP will be provisioned for STP offices only.
- 2) All offices must equip the Memory CP to the following algorithm: Starting with 24 MByte CP for mixed offices, Slot 16F,15F,14F,13F,12F,11F,10F,09F,08F,07F
- 3) All BRISC Series 50 option offices must utilize NT9X14DB only (BCS-33 and above).
- 4) All BRISC Series 60 option offices must utilize NT9X14EA only (BCS-36 and above). The maximum ammount of addressable memory for switches using the 96 MByte cards is 400 MBytes. All offices must equip memory CP to the following algorithm : Starting with 1st. slots 16F and 23F, 2nd. 15F and 24F, 3rd. 14F and 25F, 4th. 13F and 26F, 5th. 12F and 27F, 6th. 11F and 28F, 7th. 10F and 29F, 8th. 9F and 30F, 9th. 8F and 31F, 10th 7F and 32F.
- RUL3 1) Provision one (1) NTZZ01MA, Filler Face Plate in card slots (16F-07F) per the algorithm in RUL2, not equipped with a memory circuit pack.
- RUL4 1) Provide up to nine (9) NTZZ01CB to interface Network and IOC per the following formula,
$$\#NTZZ01CB = \{(\#NM/4) + (\#IOC/8)\}$$
 rounded up to the next int.

Each NM requires total of two ports. Each port must be on an adjacent slot.(one port out of 4 ports from each slot)
Each IOC requires one port out of four ports.

IOC:00 and IOC:01 have fixed assignments to MS CP position 29 port 0 and MS CP position 28 port 0 respectively. In addition it is recommended that port assignments proceed from higher number slots toward lower number slots. Each NTZZ01CB contains circuit packs and paddle boards for two (2) consecutive card slots on shelves 26 and 39. Assign NTZZ01CB in the following order; Slots 28, 26, 24, 22, 20, 18, 16, 14, 12

- 2) Provide up to eight (8) NTZZ01DB to interface the LIM/LPP per the following formula,

NTZZ01DB = {# Link Interface Module Cabinets / 2 }
to be rounded up to the next integer.

It is recommended that port assignments proceed from higher number slots toward lower number slots. One (1) NTZZ01CB is required for STP applications to interface Network & IOC Modules. Each NTZZ01DB contains circuit packs and paddle boards for two (2) consecutive card slots on shelves 26 and 39. Assign NTZZ01DB in the following order; Slots 26, 24, 22, 20, 18, 16, 14, 12.

- 3) NT9X0145 cables are assigned from the NT9X23__ PBs to the DS_30 Bulkheads as follows:

FROM CONNECTOR P2 OF NT9X23__ IN PB POSITION	TO	
	CONN DESIG	BULKHEAD DESIGNATION
12R 13R 14R 15R 16R 17R 18R 19R 20R	A B C D E F G H I	DS30 BULKHEAD INTERFACE (RIGHT) NT9X6536
21R 22R 23R 24R 25R 26R 27R 28R 29R	G H I D E F A B C	DS30 BULKHEAD INTERFACE (LEFT) NT9X6556

- 4) Provide up to five (5) NTZZ01UB to interface Network and IOC per the following formula:

$$\#NTZZ01UB = \{(\#NM/4) + (\#IOC/8)\}$$
rounded up to the next int.

Each NM requires total of two ports. Each port must be on an adjacent slot.(one port out of 4 ports from each slot)
Each IOC requires one port out of four ports.

IOC:00 and IOC:01 have fixed assignments to MS CP position 29 port 0 and MS CP position 28 port 0 respectively. In addition it is recommended that port assignments proceed from higher number slots toward lower number slots. Each NTZZ01UB contains circuit packs and paddle boards for two (2) consecutive card slots on shelves 26 and 39. Assign NTZZ01UB in the following order; Slots 28, 26,24,22,20 (Applications needing additional ports will require ENET)

- 5) Provide up to four (4) NTZZ01VB to interface the LIM/LPP per the following formula:

NTZZ01VB = {# Link Interface Module Cabinets / 2 }
to be rounded up to the next integer.

It is recommended that port assignments proceed from higher number slots toward lower number slots. One (1) NTZZ01VB is required for STP applications to interface Network & IOC Modules. Each NTZZ01VB contains circuit packs and paddle boards for two (2) consecutive card slots on shelves 26 and 39. Assign NTZZ01VB in the following order; Slots 26, 24, 22, 20 (Applications needing additional ports will require ENET)

- 6) NT9X6544 cables are assigned from the NT9X23__ PBs to the DS_30 Bulkheads per the following:

CONNECT	FROM			TO	
CONNECTOR DESIGNATION	CARD SLOT	PORT	CONN	CONN DESIG	BULKHEAD DESIGNATION
(P2) ON NT9X23-- (DS30 4 PORT) CIRCUIT PACK	20R	0	P0	A0	DS30 BULKHEAD INTERFACE (RIGHT) REFERENCE NT9X6545
	20R	1	P1	A1	
	20R	2	P2	A2	
	20R	3	P3	A3	
	21R	0	P0	B0	
	21R	1	P1	B1	
	21R	2	P2	B2	
	21R	3	P3	B3	
	22R	0	P0	C0	
	22R	1	P1	C1	
	22R	2	P2	C2	
	22R	3	P3	C3	
	23R	0	P0	D0	
	23R	1	P1	D1	
	23R	2	P2	D2	
	23R	3	P3	D3	
	24R	0	P0	E0	
	24R	1	P1	E1	
	24R	2	P2	E2	
	24R	3	P3	E3	
	25R	0	P0	E0	DS30 BULKHEAD INTERFACE (LEFT) REFERENCE NT9X6546
	25R	1	P1	E1	
	25R	2	P2	E2	
	25R	3	P3	E3	
	26R	0	P0	D0	
	26R	1	P1	D1	
	26R	2	P2	D2	
	26R	3	P3	D3	
	27R	0	P0	C0	
	27R	1	P1	C1	
	27R	2	P2	C2	
	27R	3	P3	C3	
	28R	0	P0	B0	
	28R	1	P1	B1	
	28R	2	P2	B2	
	28R	3	P3	B3	
	29R	0	P0	A0	
	29R	1	P1	A1	
	29R	2	P2	A2	
	29R	3	P3	A3	

- 7) Provide up to four (4) NTZZ01NA, Initial ENET Interface, for the first 64 Messaging Ports on each Port Group (on each ENET shelf). Note that for each ENET shelf one NTZZ01NA or NTZZ01NM must be provisioned. Each NTZZ01NA contains circuit packs and paddle boards for one (1) card slot on shelves 26 and 39. Assign NTZZ01NA in the following order; Slots 12,14,15,...24,25,27. It is recommended that port assignments proceed from lower number slots towards higher number slots.
- 8) Provide up to six (6) NTZZ01PA, Intermediate ENET Interface, if the port group exceeds 128 Messaging Ports (on each ENET shelf). Each NT9X25AA MS Port Expander PB extends the port group in multiples of 64 ports each. Each NTZZ01PA contains circuit packs and paddle boards for one (1) card slot on shelves 26 and 39. Assign NTZZ01PA in the following order; 13,14,15,...24,25,26. It is recommended that port assignments proceed from lower number slots toward higher number slots.
- 9) Provide up to four (4) NTZZ01QA, Final ENET Interface, for the final 64 Messaging Ports on each Port Group (on each ENET shelf). Each NTZZ01QA contains circuit packs and paddle boards for one (1) card slot on shelves 26 and 39. Assign NTZZ01QA in the following order; 13,14,15,...25,26,27. It is recommended that port assignments proceed from lower number slots toward higher number slots.
- 10) The NTZZ01NM, Initial ENET Interface - 128 Port, requires BCS35 or higher. Provide up to four (4) NTZZ01NM instead of the NTZZ01NA(s) for the first 128 Messaging Ports on each Port Group (on each ENET shelf). Each NTZZ01NM contains circuit packs and paddle boards for one (1) card slot on shelves 26 and 39. Assign NTZZ01NM in the following order; Slots 12,14,15,...24,25,27. It is recommended that port assignments proceed from lower number slots towards higher number slots.
- 11) The NTZZ01QM, Final ENET Interface - 128 Port, requires BCS35 or higher. Provide up to four (4) NTZZ01QM instead of the NTZZ01QA(s) for the final 128 Messaging Ports on each Port Group (on each ENET shelf). Each NTZZ01QM contains circuit packs and paddle boards for one (1) card slot on shelves 26 and 39. Assign NTZZ01QM in the following order; 13,14,15,...25,26,27. It is recommended that port assignments proceed from lower number slots toward higher number slots.

The NT9X17CA and NT9X17DAs can exist in the same port group. However, it is highly recommended that the 17CA occupy the head (first) position in the port group. There is not a significant time difference between switching the order of the cards and adding a card.

- 12 Assign the ENET ports to the lowest numbered MS slots in ascending order starting from slot 12 (i.e. slots 12, 13, etc.). However, the SAEs and EAES should anticipate and plan all future growth on each ENET shelf and provision the MS cards accordingly, by leaving a spare slot for future expansion if necessary, as shown below.

For 64 Ports Requirement

	Front	Rear	
n	NT9X17DA	NT9X20BB	to Plane 0 of ENET
n+1			reserve for future growth

	Front	Rear	
n+2	NT9X17DA	NT9X20BB	to Plane 1 of ENET
n+3			reserve for future growth

For 128 Ports Requirement

	Front	Rear	
n	NT9X17DA	NT9X20BB	to Plane 0 of ENET
n+1	NT9X17DA	NT9X25BA	
n+2			reserve for future growth

	Front	Rear	
n+3	NT9X17DA	NT9X20BB	to Plane 1 of ENET
n+4	NT9X17DA	NT9X25BA	
n+5			reserve for future growth

	Front	Rear	
12	NT9X17DA	NT9X20BB	to Plane 0 of ENET, 192 PORTS
13	NT9X17DA	NT9X25AA	
14	NT9X17DA	NT9X25BA	
15	NT9X17DA	NT9X20BB	to Plane 1 of ENET, 192 PORTS
16	NT9X17DA	NT9X25AA	
17	NT9X17DA	NT9X25BA	

	Front	Rear	
12	NT9X17DA	NT9X20BB	to Plane 0 of ENET, 256 PORTS
13	NT9X17DA	NT9X25AA	
14	NT9X17DA	NT9X25AA	
15	NT9X17DA	NT9X25BA	
16	NT9X17DA	NT9X20BB	to Plane 1 of ENET, 256 PORTS
17	NT9X17DA	NT9X25AA	
18	NT9X17DA	NT9X25AA	
19	NT9X17DA	NT9X25BA	

RUL5 1) Provide one (1) NTZZ01EA for card slots 12 through 29 (Front and Rear) not equipped with NTZZ01CA, NTZZ01DA, NTZZ01NA, NTZZ01PA, NTZZ01QA, or NTZZ01ZA. Each NTZZ01EA contains circuit packs and paddle boards for one (1) card slot on shelves 26 and 39. NTZZ01EA can be assigned in card slots from 12 thru 29.

RUL6 1) Provide one (1) NTZZ01FA CPU CP (for equipping card slots 19F and 20F) for each SuperNode Series 10 office. This processor has been Manufacture Discontinued. If an existing site is configured with a Series 10 processor, the customer is requested to contact the regional sales representative for details on how to upgrade to a Series 20 processor or higher for BCS-35 and above loads. See Section 4.1.2 ECM body for software packaging.

2) Provide one (1) NTZZ01GA CPU CP (for equipping card slots 19F and 20F) for each SuperNode Series 20 or STP office. The NT9X13BA and NT9X13BB CPU CP are to be replaced by the NTZZ01GA CPU CP at BCS 26.

3) Provide one (1) NTZZ01HA CPU CP (for equipping card slots 19F and 20F) for each SuperNode Series 30 office.

4) Provide one (1) NTZZ01JA CPU CP (for card slots 19F and 20F) for each SuperNode Series 40 office. (When UPGRADING from one CPU to another only order the CPU, not the Building Block as this comes with NT9X26ABS)

- 5) Provide one (1) NTZZ01SA BRISC CPU CP (for card slots 19F and 20F). Minimum software release that is required is BCS-33. Note: When NT9X10AA is equipped with 24 MByte memory, the system is called BRISC Series 50. When the NT9X10AA is equipped with 96 MByte memory, the system is called BRISC Series 60 option. See Rul2. When upgrading to Series 60 option, provide two (2) NT9X26DB BRISC RTIF PB when available in card slots 19R and 20R together with two Designation Labels (NT9X26DB). Minimum software release that is required is BCS-36. For new jobs requiring BRISC Series 60 option, provide two (2) NT9X10AA BRISC CPU CP in card slots 19F and 20F. The new RTIF NT9X26DB will have to be provisioned with this NT9X10AA processor.
 - 6) When UPGRADING from one CPU to another only order the CPU, not the Building Block as this comes with additional NT9X26ABs. Note the CPU PECs as follows :
 - a) Provide two (2) NT9X13BC CPU (68030 20 MHz) Proc CP in card slots 19F and 20F for SuperNode Series 20 office.
 - b) Provide two (2) NT9X13GA CPU (68030 33 MHz) Proc CP in card slots 19F and 20F for SuperNode Series 30 office.
 - c) Provide two (2) NT9X13HB CPU (68030 40 MHz) Proc CP in card slots 19F and 20F for SuperNode Series 40 office.
- RUL7
- 1) Please refer to CA drawings for U.S Applications and ignore the other parts of rul7.
 - 2) If you have more than two (2) cabinets in the lineup then refer to the CA Drawings.
 - 3) Provide one (1) End of Aisle Lamp cable assembly (NT9X0146) if this is the last cabinet in the line-up.
 - 4) Provide one (1) End of Aisle Lamp cable assembly (NT9X0172) if the spares cabinet (NT9X01FA) is located between the NT9X01JB and the end of the line-up.
- RUL8
- 1) Provide one (1) NT9X9532 stand-alone Cabling Interface Kit when powering the NT9X01JB cabinet from the 7 foot PDC frame OR powering from the new CPDC (NTRX31CA) cabinet, OR powering from the NTRX31AA or from the NTRX31BA CPDC cabinet which is in the different lineup than the NT9X01JB. This kit includes cables, filters, and miscellaneous mounting hardware.

- 2) Provide one (1) NT9X9531 Horizontal Power Cabling Interface Kit when powering the NT9X01JB cabinet from the NTRX31AA or from the NTRX31BA CPDC cabinet which is in the same lineup as the NT9X01JB. This kit includes power cables, terminal blocks, and miscellaneous mounting hardware.
- RUL9 1) Provide one (1) NT0X24BT, Frame Fail Lamp (Brown), and one P0674502, Rear Frame Fail Light, per brown DPCC cabinet NT9X01JB. Use only with other brown exterior parts.
- 2) Provide one (1) NT0X24CN, Frame Fail Lamp (Grey), and one P0699441, Rear Frame Fail Light, per grey DPCC cabinet NT9X01JB. Use only with other grey exterior parts.
- RUL10 1) Provide one (1) NTZZ01ZA (Link Interface to FLIS) to interface to a FLIS in a Enhanced Multi-Purpose Cabinet.
- RUL11 1) Reserved.
- RUL12 1) Provide NTEX5022 Cable for Inter-MS link option when interfacing with fiber link interface shelf (FLIS) for connection between MS 0 and MS 1 when copper connection is required for DS-30 paddleboards when supernode cabinets are provisioned.
- RUL13 1) Provide NTEX5023 Cable for Inter-MS link option when interfacing with fiber link interface shelf (FLIS) for connection between MS 0 and MS 1 when copper connection is required for DS-30 paddleboards when streamline cabinets are provisioned.
- RUL14 1) Provide A0352268 Cable for Inter-MS link option for connection between MS 0 and MS 1 when fiber optic connection is required for DS-512 paddleboards. This is not yet verified for FLIS application.
- RUL15 1) Provide two (2) P0736273 Optical Fiber Label when adding paddleboard that required fiber optic connections. (ie. NT9X20xx etc.)
- 2) Provide two (2) P0736273 Optical Fiber Labels according to customer safety regulations that indicate that, labels must be affixed to SuperNode cabinets provisioned with fiber optic cables.
- RUL16 1) Provide one (1) NT9X6556 MS Bulkhead Interface Left and one (1) NT9X6536 DS-30 Bulkhead Interface Right per MS shelf in NT9X01JB Cabinet for non-Cabinetized DMS(stand-alone) application.

- 2) Provide one (1) NT9X6546 DS-30 Bulkhead Interface Left and one (1) NT9X6545 DS-30 Bulkhead Interface Right per MS shelf in NT9X01JB Cabinet for Cabinetized DMS(streamline) application. Also Provide one (1) NTEX5070 Bulkhead cover plate assembly and one (1) A0279319 screw retainer for each unequipped connector position in the NT9X6545 and NT9X6546 Bulkheads.
- RUL17 1) Provide one (1) CPU 16MHZ CP (NT9X13DC) in card slot POS 9F in shelf position 26,39 for applications in BCS-29 and higher BCS.
- 2) Provide one (1) CPU 16 MHZ CP (NT9X13DD) in card slot POS 9F in shelf position 26,39 for applications in BCS-35 and higher. This is not a BCS gating requirement. Check availability with PLM/NPPM before ordering.
- 3) Provide one Designation Label corresponding to the card provided.
- RUL18 1) Depending on the memory requirements on the Message Switch provide the following. NOTE: the NT9X13DD is NOT COMPATIBLE with the NT9X14BB.
- 2) If an NT9X14BB or NT9X14DB is not used on the message switch, then provide two (2) NT9X19AA to fill the empty slot 10F on shelf 26 and 39.
- 3) PM Note: New SN DPCCs should not be provided with the NT9X14BB MS memory for BCS-31 and above loads. Also, Offices with Base-04 (CSP-03) or higher require a minimum of 16M of memory and there will be only one common MS load.

Memory Required on the Message Switch	Circuit Packs Required Per MS PLANE
10 Meg	(1)NT9X13DC (1)NT9X14BB
16 Meg	(1)NT9X13DD
28 Meg	(1)NT9X13DC (1)NT9X14DB

40 Meg	(1)NT9X13DD (1)NT9X14DB

- RUL19 1) Provide one (1) NT9X53AD Combined Clock CP in card slot 8F in shelf position 26,39 for CSP02 and higher. For Stratum 2 configurations, provision the NT9X53AC instead of the 9X53AD.

Note that, the NT9X53AB requires BCS28 or higher. NT9X53AC is incompatible with BCS30 or older BCS's. NT9X53AD is incompatible with BCS36 or older BCS's. 2) Provide the appropriate designation labels.

- RUL20 1) Deleted.

- RUL21 1) Provide one (1) P0737633 DPCC terminal block designation strip per DPCC when powering the NT9X01JB cabinet in a Cabinetized DMS application.

- 2) Provide one (1) P0736059 APC Cabinet power Filter Labels per DPCC Cabinet, when powering the DPCC cabinet in a non-Cabinetized DMS application.

- RUL22 1) Provide one (1) NT9X0324 ESP Ground Terminator Assembly in all British Telephone systems.

SUPERNODE S/DMS - BCS34 & ABOVE

PEC CODE: NTZZ01RE

CPC CODE: B0224848

| RATING: Manufacture Discontinued

REPLACES: NTZZ01RD

| REPLACED BY: NTZZ01RF

ABBREVIATION NAME: SN

ENGINEERING DESCRIPTION: The System Node Cabinet and Common CP contains the shelf assemblies, bulkheads, circuit packs and miscellaneous items that are always required for a SuperNode. The amount of memory provisioned on the message switch depends on the application.

REFERENCE DOCUMENTATION: SLZZ01RE 00 01
NTZZ01RE REL 01
MS9X01JB 01 14

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA
Carrier

ISSUE AUTHOR: NTI: Scott Maggiolo Dept. 3471 (PPK)

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NTZZ01RE EMC4-05-010 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 06 06	ECM 626 18	Create Section.
94 07 21	ECM 626 19	Correct filler PB provisioning. Solve ET52363 and ET51833.
94 09 02	ECM 626 20	ECD 018-42988 - Current Loop Kits. Put a hold on the NT9X53AD clock card. Include missing designation label. Retire Section.

The SuperNode Cabinet and Common CP is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Dual Plane Com Core Cab	NT9X01JB		1			AP
Frame Supervisory Panel	NT9X03AA	FSP		52		AP
C42 Cabinet Mechanical Assy	NT9X95BA		1			AP-01
End of Aisle Lamp Cable	NT9X0146					RUL7
End of Aisle Lamp Cable	NT9X0172					RUL7
Msg Sw Shelf Assembly	NT9X0440	MS	2	26, 39		AP-01
-5V 20A Converter	NT9X31AA		4	26, 39	1F, 33F	AP
+5V 80A Converter	NT9X30AA		4	26, 39	4F, 36F	AP
MS T-Bus Terminator CP	NT9X52AA		2	26, 39	7F	AP
MS Ext System Clock I/F CP	NT9X53AB		2	26, 39	8F	RUL19
Combined Clock CP	NT9X53AC		2	26, 39	8F	RUL19
DMS-Bus System Clock CP	NT9X53AD		2	26, 39	8F	RUL19
Des Label (NT9X53AB)	P0705004		2	26, 39	8F	RUL19
Des Label (NT9X53AC)	P0726965		2	26, 39	8F	RUL19
Des Label (NT9X53AD)	P0-----		2	26, 39	8F	RUL19
CPU 16 MHZ CP(4 MB)	NT9X13DC		2	26, 39	9F	RUL17
Des Label (NT9X13DC)	P0696240		2	26, 39	9F	RUL17
CPU 16 MHZ CP(16 MB)	NT9X13DD		2	26, 39	9F	RUL17
Des Label (NT9X13DD)	P0743628		2	26, 39	9F	RUL17
Filler Circuit Pack	NT9X19AA		2	26, 39	10F	RUL18
6 MB Memory CP	NT9X14BB		2	26, 39	10F	RUL18
Des Label (NT9X14BB)	P0689619		2	26, 39	10F	RUL18
24 MB Memory CP	NT9X14DB		2	26, 39	10F	RUL18
Des Label (NT9X14DB)	P0700802		2	26, 39	10F	RUL18
Mapper CP	NT9X15AA		2	26, 39	11F	AP
4 Port Network & IOC I/F	NTZZ01CB			26	28F, 26F 24F, 22F 20F, 18F 16F, 14F 12F	RUL4
4 Port LIM/LPP Interface	NTZZ01DB			26	26F, 24F 22F, 20F 18F, 16F 14F, 12F	RUL4
Streamline 4 Port Network & IOC I/F	NTZZ01UB			26	28F, 26F 24F, 22F 20F, 18F 16F, 14F 12F	RUL4
Streamline 4 Port LIM/LPP Interface	NTZZ01VB			26	26F, 24F 22F, 20F 18F, 16F 14F, 12F	RUL4

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Initial ENET I/F	NTZZ01NA			26	27F-12F	RUL4
Intermediate ENET I/F	NTZZ01PA			26	26F-13F	RUL4
Final ENET I/F	NTZZ01QA			26	27F-13F	RUL4
Initial ENET I/F - 128 Port	NTZZ01NM			26	27F-12F	RUL4
Final ENET I/F - 128 Port	NTZZ01QM			26	27F-13F	RUL4
Link Interface for FLIS	NTZZ01ZA			26,39	12F-27F	RUL10
I/F Filler Face Plate	NTZZ01EA			26	12F-29F	RUL5
MS 4-Port CP	NT9X17AD		4	26,39	30F,31F	AP
Des Label (NT9X17AD)	P0735096		4	26,39	30F,31F	AP
MS P-Bus Terminator CP	NT9X49CB		2	26,39	32F	AP
Des Label (NT9X49CB)	P0697532		2	26,39	32F	AP
MS Loading Paddle Board	NT9X32AA		2	26,39	7R	AP
PB Filler Face Plate	NT9X19BA		2	26,39	10R	AP
Subsystem Clock PB (Ext I/F)	NT9X54AC		2	26,39	8R	AP
Des Label (NT9X54AC)	P0705005		2	26,39	8R	AP
Remote Term I/F Curr Loop	NT9X26AB		2	26,39	9R	AP
Desig. Label(NT9X26AB)	P0705003		2	26,39	9R	AP
PB Filler Face Plate	NT9X19BA		4	26,39	11R,32R	AP
DS-512 PB	NT9X20AA		4	26,39	30R-31R	AP
Shelf CP Fill Front Label	P0698334		2	26,39		AP
Shelf CP Fill Rear Label	P0690632		2	26,39		AP
MS Blkhd I/F (Left)	NT9X6556		2	26,39		RUL16
DS30 Blkhd I/F (Right)(DMS)	NT9X6536		2	26,39		RUL16
DS30 Blkhd I/F (Right)(DMS)	NT9X6545		2	26,39		RUL16
(Streamline)						
DS30 Blkhd I/F (Left) (DMS)	NT9X6546		2	26,39		RUL16
(Streamline)						
Bulkhead coverplate assy.	NTEX5070			26,39		RUL16
Screw Retainer	A0279319			26,39		RUL16
Coax Ca Assy (NT9X54AC/AD)	NT9X0192		4	26,39		AP-01
Composite Clk CA Assy	NT9X0175		2	26,39		AP-01
Inter-MS DS-30 Cable Assy	NTEX5022			26,39		RUL12
Inter-MS DS-30 Cable Assy	NTEX5023			26,39		RUL13
Fiber Optic Cable	A0352268			26,39		RUL14
Optical Fiber Label(Eng.)	P0736273			39,26,13		RUL15
Comp Mod Duplex Sh Assy	NT9X0605	CM	1	13		AP-01
Comp Mod Duplex Comm CP	NT9X06AD		1	13		AP
-5V 20A Power Conv.	NT9X31AA		2	13	1F,33F	AP-03
+5V 80A Power Conv.	NT9X30AA		2	13	4F,36F	AP-03
6MB Memory	NTZZ01KA			13	16F-7F	RUL2
24MB Memory	NTZZ01LA			13	16F-7F	RUL2
96MB Memory	NT9X14EA			13	16F-12F,27F-23F	RUL2
Designation Label (NT9X14EA)	P0736863			13	16F-12F,27F-23F	RUL2

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Filler Face Plate	NTZZ01MA			13	16F-7F	RUL3
CPU Port CP	NT9X12AC		4	13	17F-18F 21F-22F	AP
Des Label (NT9X12AC)	P0727356		4	13	17F,18F 21F,22F	AP
CPU Processor CP	NT9X13BA			13	19F	RUL6
CPU Processor CP	NT9X13BB			13	19F	RUL6
Supernode Series 10 CPU CP	NTZZ01FA			13	19F	RUL6
Supernode Series 20 CPU CP	NTZZ01GA			13	19F	RUL6
Supernode Series 30 CPU CP	NTZZ01HA			13	19F	RUL6
Supernode Series 40 CPU CP	NTZZ01JA			13	19F	RUL6
Supernode BRISC CPU	NTZZ01SA			13	19F	RUL6
BRISC RTIF PB	NT9X26DB			13	19R,20R	RUL6
Designation Label (NT9X26DB)	P0747896			13	19R,20R	RUL6
Designation Label (NT9X10AA)	P0734152			13	19F,20F	RUL6
33 MHZ 88000 BRISC CPU CP	NT9X10AA			13	19F,20F	RUL6
Series 60 Upgrade Kit	NTZZ99AS					RUL6
Se. 60 Upg. Kit from Se. 50	NTZZ99AR					RUL6
CM Bus Terminator	NT9X21AA		2	13	7R,32R	AP-03
Filler Face Plate	NT9X19BA			13	8R,31R	RUL1
PB Filler Face Plate	NT9X19BA		14	13	9R-15R 24R-30R	AP
Subsystem Clock	NT9X22CA		2	13	16R,23R	AP-03
DS512 PB	NT9X20AA		4	13	17R-18R 21R-22R	AP-03
Shelf CP Fill Front Label	P0700719		1	13		AP-03
Shelf CP Fill Rear Label	P0678438		1	13		AP-03
Cable Bulkhead (right)	NT9X6539		1	13		AP
Cable Bulkhead (left)	NT9X6540		1	13		AP
RS232C & Curr Loop Ca Assy	NT9X0196		2	13		AP
CM SLM Ext Shelf Assy	NT9X0702	SLM	1	00		AP-01
SLM Common Module	NTZZ01BA			00		RUL1
Filler Packfill	NT9X01FB			00		RUL1
System Load Module II	NT9X44AB			00	8F,24F	RUL1
Cooling Unit	NT9X95CU					AP
Stand-alone Power Cab. kit	NT9X9532					RUL8
Horizontal Power Cab.kit	NT9X9531					RUL8
Frame Fail Lamp (Grey)	NT0X24CN		1			RUL9
Rear Frame Fail Light(Grey)	P0699441		1			RUL9
Frame Fail Lamp (Brown)	NT0X24BT		1			RUL9
Rear Frame Fail Light(Brown)	P0674502		1			RUL9
Terminal Block Desig. Strip	P0737633		1			RUL21
APC Cab. Power Filter Labels	P0736059		1			RUL21

Retired Equipment
SUPERNODE S/DMS - BCS34 5 ABOVE

NTZZ01RE
EMC4-05-010
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EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
ESP Ground Terminator Assy.	NT9X0324		1			RUL22
FSP Terminal Block (TB1) Cover Assembly	A0368392		1	52		RUL23
C42 Cabinet Mechanical Assy	NT9X95BA					NOTE1

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) Refer to NT9X95BA(EMA4-07-001) for additional mechanical hardware requirements for C42 Cabinet.

RULES:

- AP 1) When PEC NTZZ01RE is ordered, these items are provided.
- AP-01 1) This PEC is always provided on the NT9X01JB cabinet, and is indicated here for completeness.
- 2) Refer to NT9X95BA(EMA4-07-001) section for additional Mechanical Hardware requirements for C42 (S/DMS) Cabinet.
- AP-02 1) Reserved for future use.

- AP-03 1) This PEC is always provided on the NT9X06AD CM Common CP, and is indicated here for completeness.
- RUL1 1) When the System Load Module (SLM) is a requirement, provide one (1) NTZZ01BA SLM Common fill and two (2) NT9X44AB SLM II units. The SLM II is a hardware requirement for offices ordering NA001 or higher Product Layers.
- SLM II requires software package NTXE54AA. The Device Independent Recording Package(DIRP) on SLM is optional, and it is activated internally by the presence of package module DIRPSLM in NTXJ44AA - SLM File System.
- 2) When the SLM is not a requirement, provide one (1) Filler Packfill NT9X01FB at shelf position 00, and two (2) Filler Face Plates, NT9X19BA, in shelf position 13 for card slots 8R, 31R to satisfy the forced air cooling requirements of the frame.
- RUL2 1) Provision one (1) 24Mb Memory Circuit Packs, NTZZ01LA, for each 24Mb increment of memory required. A reminder that in addition to the operational memory provisioned, one extra memory CP must be provided per plane to be assigned as a reliability spare. The NTZZ01KA 6 MByte CP will be provisioned for STP offices only.
- 2) All offices must equip the Memory CP to the following algorithm: Starting with 24 MByte CP for mixed offices, Slot 16F, 15F, 14F, 13F, 12F, 11F, 10F, 09F, 08F, 07F
- 3) All BRISC Series 50 option offices must utilize NT9X14DB only (BCS-33 and above).
- 4) All BRISC Series 60 option offices must utilize NT9X14EA only (BCS-36 and above). The maximum amount of addressable memory for switches using the 96 MByte cards is 400 MBytes. All offices must equip memory CP to the following algorithm : Starting with 1st. slots 16F and 23F, 2nd. 15F and 24F, 3rd. 14F and 25F, 4th. 13F and 26F, 5th. 12F and 27F, 6th. 11F and 28F, 7th. 10F and 29F, 8th. 9F and 30F, 9th. 8F and 31F, 10th 7F and 32F.
- RUL3 1) Provision one (1) NTZZ01MA, Filler Face Plate in card slots (16F-07F) per the algorithm in RUL2, not equipped with a memory circuit pack.
- RUL4 1) Provide up to nine (9) NTZZ01CB to interface Network and IOC per the following formula,

$\#NTZZ01CB = \{(\#NM/4) + (\#IOC/8)\}$ rounded up to the next int.

Each NM requires total of two ports. Each port must be on an adjacent slot.(one port out of 4 ports from each slot)
Each IOC requires one port out of four ports.

IOC:00 and IOC:01 have fixed assignments to MS CP position 29 port 0 and MS CP position 28 port 0 respectively. In addition it is recommended that port assignments proceed from higher number slots toward lower number slots. Each NTZZ01CB contains circuit packs and paddle boards for two (2) consecutive card slots on shelves 26 and 39. Assign NTZZ01CB in the following order; Slots 28, 26, 24, 22, 20, 18, 16, 14, 12

- 2) Provide up to eight (8) NTZZ01DB to interface the LIM/LPP per the following formula,

$\# NTZZ01DB = \{ \# \text{ Link Interface Module Cabinets } / 2 \}$
to be rounded up to the next integer.

It is recommended that port assignments proceed from higher number slots toward lower number slots. One (1) NTZZ01CB is required for STP applications to interface Network & IOC Modules. Each NTZZ01DB contains circuit packs and paddle boards for two (2) consecutive card slots on shelves 26 and 39. Assign NTZZ01DB in the following order; Slots 26, 24, 22, 20, 18, 16, 14, 12.

- 3) NT9X0145 cables are assigned from the NT9X23__ PBs to the DS_30 Bulkheads as follows:

FROM CONNECTOR P2 OF NT9X23__ IN PB POSITION	TO	
	CONN DESIG	BULKHEAD DESIGNATION
12R 13R 14R 15R 16R 17R 18R 19R 20R	A B C D E F G H I	DS30 BULKHEAD INTERFACE (RIGHT) NT9X6536
21R 22R 23R 24R 25R 26R 27R 28R 29R	G H I D E F A B C	DS30 BULKHEAD INTERFACE (LEFT) NT9X6556

- 4) Provide up to five (5) NTZZ01UB to interface Network and IOC per the following formula:

$$\#NTZZ01UB = \{(\#NM/4) + (\#IOC/8)\}$$
rounded up to the next int.

Each NM requires total of two ports. Each port must be on an adjacent slot.(one port out of 4 ports from each slot)
Each IOC requires one port out of four ports.

IOC:00 and IOC:01 have fixed assignments to MS CP position 29 port 0 and MS CP position 28 port 0 respectively. In addition it is recommended that port assignments proceed from higher number slots toward lower number slots. Each NTZZ01UB contains circuit packs and paddle boards for two (2) consecutive card slots on shelves 26 and 39. Assign NTZZ01UB in the following order; Slots 28, 26,24,22,20 (Applications needing additional ports will require ENET)

- 5) Provide up to four (4) NTZZ01VB to interface the LIM/LPP per the following formula:

NTZZ01VB = {# Link Interface Module Cabinets / 2 }
to be rounded up to the next integer.

It is recommended that port assignments proceed from higher number slots toward lower number slots. One (1) NTZZ01VB is required for STP applications to interface Network & IOC Modules. Each NTZZ01VB contains circuit packs and paddle boards for two (2) consecutive card slots on shelves 26 and 39. Assign NTZZ01VB in the following order; Slots 26, 24, 22, 20 (Applications needing additional ports will require ENET)

- 6) NT9X6544 cables are assigned from the NT9X23__ PBs to the DS_30 Bulkheads per the following:

CONNECT	FROM			TO	
CONNECTOR DESIGNATION	CARD SLOT	PORT	CONN	CONN DESIG	BULKHEAD DESIGNATION
(P2) ON NT9X23-- (DS30 4 PORT) CIRCUIT PACK	20R	0	P0	A0	DS30 BULKHEAD INTERFACE (RIGHT) REFERENCE NT9X6545
	20R	1	P1	A1	
	20R	2	P2	A2	
	20R	3	P3	A3	
	21R	0	P0	B0	
	21R	1	P1	B1	
	21R	2	P2	B2	
	21R	3	P3	B3	
	22R	0	P0	C0	
	22R	1	P1	C1	
	22R	2	P2	C2	
	22R	3	P3	C3	
	23R	0	P0	D0	
	23R	1	P1	D1	
	23R	2	P2	D2	
	23R	3	P3	D3	
	24R	0	P0	E0	
	24R	1	P1	E1	
	24R	2	P2	E2	
	24R	3	P3	E3	
	25R	0	P0	E0	DS30 BULKHEAD INTERFACE (LEFT) REFERENCE NT9X6546
	25R	1	P1	E1	
	25R	2	P2	E2	
	25R	3	P3	E3	
	26R	0	P0	D0	
	26R	1	P1	D1	
	26R	2	P2	D2	
	26R	3	P3	D3	
	27R	0	P0	C0	
	27R	1	P1	C1	
	27R	2	P2	C2	
	27R	3	P3	C3	
	28R	0	P0	B0	
	28R	1	P1	B1	
	28R	2	P2	B2	
	28R	3	P3	B3	
	29R	0	P0	A0	
	29R	1	P1	A1	
	29R	2	P2	A2	
	29R	3	P3	A3	

- 7) Provide up to four (4) NTZZ01NA, Initial ENET Interface, for the first 64 Messaging Ports on each Port Group (on each ENET shelf). Note that for each ENET shelf one NTZZ01NA or NTZZ01NM must be provisioned. Each NTZZ01NA contains circuit packs and paddle boards for one (1) card slot on shelves 26 and 39. Assign NTZZ01NA in the following order; Slots 12,14,15,...24,25,27. It is recommended that port assignments proceed from lower number slots towards higher number slots.
- 8) Provide up to six (6) NTZZ01PA, Intermediate ENET Interface, if the port group exceeds 128 Messaging Ports (on each ENET shelf). Each NT9X25AA MS Port Expander PB extends the port group in multiples of 64 ports each. Each NTZZ01PA contains circuit packs and paddle boards for one (1) card slot on shelves 26 and 39. Assign NTZZ01PA in the following order; 13,14,15,...24,25,26. It is recommended that port assignments proceed from lower number slots toward higher number slots.
- 9) Provide up to four (4) NTZZ01QA, Final ENET Interface, for the final 64 Messaging Ports on each Port Group (on each ENET shelf). Each NTZZ01QA contains circuit packs and paddle boards for one (1) card slot on shelves 26 and 39. Assign NTZZ01QA in the following order; 13,14,15,...25,26,27. It is recommended that port assignments proceed from lower number slots toward higher number slots.
- 10) The NTZZ01NM, Initial ENET Interface - 128 Port, requires BCS35 or higher. Provide up to four (4) NTZZ01NM instead of the NTZZ01NA(s) for the first 128 Messaging Ports on each Port Group (on each ENET shelf). Each NTZZ01NM contains circuit packs and paddle boards for one (1) card slot on shelves 26 and 39. Assign NTZZ01NM in the following order; Slots 12,14,15,...24,25,27. It is recommended that port assignments proceed from lower number slots towards higher number slots.
- 11) The NTZZ01QM, Final ENET Interface - 128 Port, requires BCS35 or higher. Provide up to four (4) NTZZ01QM instead of the NTZZ01QA(s) for the final 128 Messaging Ports on each Port Group (on each ENET shelf). Each NTZZ01QM contains circuit packs and paddle boards for one (1) card slot on shelves 26 and 39. Assign NTZZ01QM in the following order; 13,14,15,...25,26,27. It is recommended that port assignments proceed from lower number slots toward higher number slots.

The NT9X17CA and NT9X17DAs can exist in the same port group. However, it is highly recommended that the 17CA occupy the head (first) position in the port group. There is not a significant time difference between switching the order of the cards and adding a card.

- 12 Assign the ENET ports to the lowest numbered MS slots in ascending order starting from slot 12 (i.e. slots 12, 13, etc.). However, the SAEs and EAES should anticipate and plan all future growth on each ENET shelf and provision the MS cards accordingly, by leaving a spare slot for future expansion if necessary, as shown below.

For 64 Ports Requirement

	Front	Rear	
n	NT9X17DA	NT9X20BB	to Plane 0 of ENET
n+1			reserve for future growth

	Front	Rear	
n+2	NT9X17DA	NT9X20BB	to Plane 1 of ENET
n+3			reserve for future growth

For 128 Ports Requirement

	Front	Rear	
n	NT9X17DA	NT9X20BB	to Plane 0 of ENET
n+1	NT9X17DA	NT9X25BA	
n+2			reserve for future growth

	Front	Rear	
n+3	NT9X17DA	NT9X20BB	to Plane 1 of ENET
n+4	NT9X17DA	NT9X25BA	
n+5			reserve for future growth

	Front	Rear	
12	NT9X17DA	NT9X20BB	to Plane 0 of ENET, 192 PORTS
13	NT9X17DA	NT9X25AA	
14	NT9X17DA	NT9X25BA	
15	NT9X17DA	NT9X20BB	to Plane 1 of ENET, 192 PORTS
16	NT9X17DA	NT9X25AA	
17	NT9X17DA	NT9X25BA	

	Front	Rear	
12	NT9X17DA	NT9X20BB	to Plane 0 of ENET, 256 PORTS
13	NT9X17DA	NT9X25AA	
14	NT9X17DA	NT9X25AA	
15	NT9X17DA	NT9X25BA	
16	NT9X17DA	NT9X20BB	to Plane 1 of ENET, 256 PORTS
17	NT9X17DA	NT9X25AA	
18	NT9X17DA	NT9X25AA	
19	NT9X17DA	NT9X25BA	

RUL5 1) Provide one (1) NTZZ01EA for card slots 12 through 29 (Front and Rear) not equipped with NTZZ01CA, NTZZ01DA, NTZZ01NA, NTZZ01PA, NTZZ01QA, or NTZZ01ZA. Each NTZZ01EA contains circuit packs and paddle boards for one (1) card slot on shelves 26 and 39. NTZZ01EA can be assigned in card slots from 12 thru 29.

RUL6 1) Provide one (1) NTZZ01FA CPU CP (for equipping card slots 19F and 20F) for each SuperNode Series 10 office. This processor has been Manufacture Discontinued. If an existing site is configured with a Series 10 processor, the customer is requested to contact the regional sales representative for details on how to upgrade to a Series 20 processor or higher for BCS-35 and above loads. See Section 4.1.2 ECM body for software packaging.

2) Provide one (1) NTZZ01GA CPU CP (for equipping card slots 19F and 20F) for each SuperNode Series 20 or STP office. The NT9X13BA and NT9X13BB CPU CP are to be replaced by the NTZZ01GA CPU CP at BCS 26.

3) Provide one (1) NTZZ01HA CPU CP (for equipping card slots 19F and 20F) for each SuperNode Series 30 office.

4) Provide one (1) NTZZ01JA CPU CP (for card slots 19F and 20F) for each SuperNode Series 40 office. (When UPGRADING from one CPU to another only order the CPU, not the Building Block as this comes with NT9X26ABS)

- 5) Provide one (1) NTZZ01SA BRISC CPU CP (for card slots 19F and 20F). Minimum software release that is required is BCS-33. Note: When NT9X10AA is equipped with 24 MByte memory, the system is called BRISC Series 50. When the NT9X10AA is equipped with 96 MByte memory, the system is called BRISC Series 60 option. See Rul2. When upgrading to Series 60 option, provide two (2) NT9X26DB BRISC RTIF PB when available in card slots 19R and 20R together with two Designation Labels (NT9X26DB). Minimum software release that is required is BCS-36. For new jobs requiring BRISC Series 60 option, provide two (2) NT9X10AA BRISC CPU CP in card slots 19F and 20F. The new RTIF NT9X26DB will have to be provisioned with this NT9X10AA processor.
- 6) When UPGRADING from one CPU to another only order the CPU, not the Building Block as this comes with additional NT9X26ABs. Note the CPU PECs as follows :
 - a) Provide two (2) NT9X13BC CPU (68030 20 MHz) Proc CP in card slots 19F and 20F for SuperNode Series 20 office.
 - b) Provide two (2) NT9X13GA CPU (68030 33 MHz) Proc CP in card slots 19F and 20F for SuperNode Series 30 office.
 - c) Provide two (2) NT9X13HB CPU (68030 40 MHz) Proc CP in card slots 19F and 20F for SuperNode Series 40 office.
- 7) For Canadian applications, the NTZZ99AS Series 60 Upgrade Kit can be provided for Series 10, 20, 30, or 40 offices that have NT9X12ABs and NT9X26ABs existing in the switch. This kit contains the processors, cpu port cards, (8) 96 MByte memory cards, RTIFs, and all of the associated labels. When this kit is ordered, do not provision the detail pecs associated with this kit. 8) For Canadian applications, the NTZZ99AR Series 60 Upgrade Kit From Series 50 can be provided for Series 50 offices. This kit contains (8) 96 MByte memory cards, RTIFs, and all of the associated labels. When this kit is ordered, do not provision the detail pecs associated with this kit.

- RUL7
- 1) Please refer to CA drawings for U.S Applications and ignore the other parts of RUL7.
 - 2) If you have more than two (2) cabinets in the lineup then refer to the CA Drawings.
 - 3) Provide one (1) End of Aisle Lamp cable assembly (NT9X0146) if this is the last cabinet in the line-up.

- 4) Provide one (1) End of Aisle Lamp cable assembly (NT9X0172) if the spares cabinet (NT9X01FA) is located between the NT9X01JB and the end of the line-up.
- RUL8 1) Provide one (1) NT9X9532 stand-alone Cabling Interface Kit when powering the NT9X01JB cabinet from the 7 foot PDC frame OR powering from the new CPDC (NTRX31CA) cabinet, OR powering from the NTRX31AA or from the NTRX31BA CPDC cabinet which is in the different lineup than the NT9X01JB. This kit includes cables, filters, and miscellaneous mounting hardware.
- 2) Provide one (1) NT9X9531 Horizontal Power Cabling Interface Kit when powering the NT9X01JB cabinet from the NTRX31AA or from the NTRX31BA CPDC cabinet which is in the same lineup as the NT9X01JB. This kit includes power cables, terminal blocks, and miscellaneous mounting hardware.
- RUL9 1) Provide one (1) NT0X24BT, Frame Fail Lamp (Brown), and one P0674502, Rear Frame Fail Light, per brown DPCC cabinet NT9X01JB. Use only with other brown exterior parts.
- 2) Provide one (1) NT0X24CN, Frame Fail Lamp (Grey), and one P0699441, Rear Frame Fail Light, per grey DPCC cabinet NT9X01JB. Use only with other grey exterior parts.
- RUL10 1) Provide one (1) NTZZ01ZA (Link Interface to FLIS) to interface to a FLIS in a Enhanced Multi-Purpose Cabinet.
- RUL11 1) Reserved.
- RUL12 1) Provide NTEX5022 Cable for Inter-MS link option when interfacing with fiber link interface shelf (FLIS) for connection between MS 0 and MS 1 when copper connection is required for DS-30 paddleboards when supernode cabinets are provisioned.
- RUL13 1) Provide NTEX5023 Cable for Inter-MS link option when interfacing with fiber link interface shelf (FLIS) for connection between MS 0 and MS 1 when copper connection is required for DS-30 paddleboards when streamline cabinets are provisioned.
- RUL14 1) Provide A0352268 Cable for Inter-MS link option for connection between MS 0 and MS 1 when fiber optic connection is required for DS-512 paddleboards. This is not yet verified for FLIS application.

- RUL15 1) Provide two (2) P0736273 Optical Fiber Label when adding paddleboard that required fiber optic connections. (ie. NT9X20xx etc.)
- 2) Provide two (2) P0736273 Optical Fiber Labels according to customer safety regulations that indicate that, labels must be affixed to SuperNode cabinets provisioned with fiber optic cables.
- RUL16 1) Provide one (1) NT9X6556 MS Bulkhead Interface Left and one (1) NT9X6536 DS-30 Bulkhead Interface Right per MS shelf in NT9X01JB Cabinet for non-Cabinetized DMS(stand-alone) application.
- 2) Provide one (1) NT9X6546 DS-30 Bulkhead Interface Left and one (1) NT9X6545 DS-30 Bulkhead Interface Right per MS shelf in NT9X01JB Cabinet for Cabinetized DMS(streamline) application. Also Provide one (1) NTEX5070 Bulkhead cover plate assembly and one (1) A0279319 screw retainer for each unequipped connector position in the NT9X6545 and NT9X6546 Bulkheads.
- RUL17 1) Provide one (1) CPU 16MHZ CP (NT9X13DC) in card slot POS 9F in shelf position 26,39 for applications in BCS-29 and higher BCS.
- 2) Provide one (1) CPU 16 MHZ CP (NT9X13DD) in card slot POS 9F in shelf position 26,39 for applications in BCS-35 and higher. This is not a BCS gating requirement. Check availability with PLM/NPPM before ordering.
- 3) Provide one Designation Label corresponding to the card provided.
- RUL18 1) Depending on the memory requirements on the Message Switch provide the following. NOTE: the NT9X13DD is NOT COMPATIBLE with the NT9X14BB.
- 2) If an NT9X14BB or NT9X14DB is not used on the message switch, then provide two (2) NT9X19AA to fill the empty slot 10F on shelf 26 and 39.
- 3) PM Note: New SN DPCCs should not be provided with the NT9X14BB MS memory for BCS-31 and above loads. Also, Offices with Base-04 (CSP-03) or higher require a minimum of 16M of memory and there will be only one common MS load.

Memory Required on	Circuit Packs

the Message Switch	Required Per MS PLANE
10 Meg	(1)NT9X13DC (1)NT9X14BB
16 Meg	(1)NT9X13DD
28 Meg	(1)NT9X13DC (1)NT9X14DB
40 Meg	(1)NT9X13DD (1)NT9X14DB

- RUL19 1) Provide one (1) NT9X53AD Combined Clock CP in card slot 8F in shelf position 26,39 for CSP02 and higher. For Stratum 2 configurations, provision the NT9X53AC instead of the 9X53AD.

Note that, the NT9X53AB requires BCS28 or higher. NT9X53AC is incompatible with BCS30 or older BCS's. NT9X53AD is incompatible with BCS36 or older BCS's. The NT9X53AD is currently not orderable.

- 2) Provide the appropriate designation labels.

- RUL20 1) Deleted.

- RUL21 1) Provide one (1) P0737633 DPCC terminal block designation strip per DPCC when powering the NT9X01JB cabinet in a Cabinetized DMS application.

- 2) Provide one (1) P0736059 APC Cabinet power Filter Labels per DPCC Cabinet, when powering the DPCC cabinet in a non-Cabinetized DMS application.

- RUL22 1) Provide one (1) NT9X0324 ESP Ground Terminator Assembly in all British Telephone systems.

- RUL22) 1) Provide one (1) A0368392 in all international applications.

SUPERNODE S/DMS - BCS34 & ABOVE

PEC CODE: NTZZ01RF

CPC CODE: B0241493

| RATING: MD

REPLACES: NTZZ01RE

| REPLACED BY: NTZZ01RG

ABBREVIATION NAME: DPCC

ENGINEERING DESCRIPTION: The System Node Cabinet and Common CP contains the shelf assemblies, bulkheads, circuit packs and miscellaneous items that are always required for a SuperNode. The amount of memory provisioned on the message switch depends on the application.

REFERENCE DOCUMENTATION: SLZZ01RF 00 01
NTZZ01RF REL 01
MS9X01JB 01 20

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA
Carrier

ISSUE AUTHOR: NTI: Scott Maggiolo Dept. 3471 (PPK)

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NTZZ01RF EMC4-05-011 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 09 02	ECM 626 20	ECD 006-20443 - Introduce NT9X12AD. Stop NT9X13DC prov. for initials.
94 09 09	ECM 626 21	Introduce new SLM Building Block.
94 10 18	ECM 626 22	Minor changes.
95 02 09	ECM 626 23	Make the NT9X53AD orderable. Rewrite and divide Rule 4 for clarity. Renumber all rules following Rule 4. Rewrite Rule 10 for clarity. Introduce BRISC Series 70 processor. MD NTZZ01NM per EC 018-44319. Introduce NTZZ01NN per EC 018-44319. Other minor changes.
95 04 06	ECM 626 24	Introduce SLM III. Introduce Mixed Memory for BRISC Series 50. MD NTZZ01SB when the NTZZ01SC becomes available and replace with NTZZ01SC.
95 07 11	ECM 626 25	Correct assignment positions for NTZZ01NN in Rule 6 per ET 80013. Clarify provisioning of NTEX5070 in RUL18 per ET 71573. MD NT9X01FA and replace with NTRX49AA. MD NT9X12AB and replace with NT9X12AD. MD NT9X13BB and replace with NT9X13BC. Refer to ECD 018-41001, ECD 006-17687. EC018-45801 Remove frame fail lights. ET27919 Remove M5 cables.
95 08 28	ECM 626 26	ET80323 - Add A0326932 for sparing. Modified SLM III upgrade information.
95 12 19	ECM 626 29	EC018-44339 - NT9X20BC with 9X17DA.
96 03 22	ECM 626 30	MD section per GMF requirements.

The SuperNode Cabinet and Common CP is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Dual Plane Com Core Cab	NT9X01JB		1			AP
Frame Supervisory Panel	NT9X03AA	FSP	1	52		AP
C42 Cabinet Mechanical Assy	NT9X95BA		1			AP-01
End of Aisle Lamp Cable	NT9X0146					RUL9
End of Aisle Lamp Cable	NT9X0172					RUL9
Msg Sw Shelf Assembly	NT9X0440	MS	2	26, 39		AP-01
-5V 20A Converter	NT9X31AA		4	26, 39	1F, 33F	AP
+5V 80A Converter	NT9X30AA		4	26, 39	4F, 36F	AP
MS T-Bus Terminator CP	NT9X52AA		2	26, 39	7F	AP
MS Ext System Clock I/F CP	NT9X53AB		2	26, 39	8F	RUL21
Combined Clock CP	NT9X53AC		2	26, 39	8F	RUL21
DMS-Bus System Clock CP	NT9X53AD		2	26, 39	8F	RUL21
Des Label (NT9X53AB)	P0705004		2	26, 39	8F	RUL21
Des Label (NT9X53AC)	P0726965		2	26, 39	8F	RUL21
Des Label (NT9X53AD)	P0803728		2	26, 39	8F	RUL21
CPU 16 MHZ CP(4 MB)	NT9X13DC		2	26, 39	9F	RUL19
Des Label (NT9X13DC)	P0696240		2	26, 39	9F	RUL19
CPU 16 MHZ CP(16 MB)	NT9X13DD		2	26, 39	9F	RUL19
Des Label (NT9X13DD)	P0743628		2	26, 39	9F	RUL19
Filler Circuit Pack	NT9X19AA		2	26, 39	10F	RUL20
MS Loading PaddleBoard	NT9X32AA		2	26, 39	10R	AP
6 MB Memory CP	NT9X14BB		2	26, 39	10F	RUL20
Des Label (NT9X14BB)	P0689619		2	26, 39	10F	RUL20
24 MB Memory CP	NT9X14DB		2	26, 39	10F	RUL20
Des Label (NT9X14DB)	P0700802		2	26, 39	10F	RUL20
Mapper CP	NT9X15AA		2	26, 39	11F	AP
4 Port Network & IOC I/F	NTZZ01CB			26	28F, 26F 24F, 22F 20F, 18F 16F, 14F 12F	RUL4
4 Port LIM/LPP Interface	NTZZ01DB			26	26F, 24F 22F, 20F 18F, 16F 14F, 12F	RUL4
Streamline 4 Port Network & IOC I/F	NTZZ01UB			26	28F, 26F 24F, 22F 20F, 18F 16F, 14F 12F	RUL5
Streamline 4 Port LIM/LPP Interface	NTZZ01VB			26	26F, 24F 22F, 20F 18F, 16F	RUL5

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EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
					14F, 12F	
Initial ENET I/F	NTZZ01NB			26	27F-12F	RUL6
Intermediate ENET I/F	NTZZ01PA			26	26F-13F	RUL6
Final ENET I/F	NTZZ01QA			26	27F-13F	RUL6
Initial ENET I/F - 128 Port	NTZZ01NN			26	27F-12F	RUL6
# Initial ENET I/F - 128 Port	NTZZ01NM			26	27F-12F	RUL6
Final ENET I/F - 128 Port	NTZZ01QM			26	27F-13F	RUL6
Link Interface for FLIS/APC	NTZZ01ZA			26, 39	12F-27F	RUL12
I/F Filler Face Plate	NTZZ01EA			26	12F-29F	RUL7
MS 4-Port CP	NT9X17AD		4	26, 39	30F, 31F	AP
Des Label (NT9X17AD)	P0735096		4	26, 39	30F, 31F	AP
MS P-Bus Terminator CP	NT9X49CB		2	26, 39	32F	AP
Des Label (NT9X49CB)	P0697532		2	26, 39	32F	AP
MS Loading PaddleBoard	NT9X32AA		2	26, 39	7R	AP
Subsystem Clock PB (Ext I/F)	NT9X54AC		2	26, 39	8R	AP
Des Label (NT9X54AC)	P0705005		2	26, 39	8R	AP
Remote Term I/F Curr Loop	NT9X26AB		2	26, 39	9R	AP
Desig. Label(NT9X26AB)	P0705003		2	26, 39	9R	AP
PB Filler Face Plate	NT9X19BA		4	26, 39	11R, 32R	AP
DS-512 PB	NT9X20AA		4	26, 39	30R-31R	AP
Shelf CP Fill Front Label	P0698334		2	26, 39		AP
Shelf CP Fill Rear Label	P0690632		2	26, 39		AP
MS Blkhd I/F (Left)	NT9X6556		2	26, 39		RUL18
DS30 Blkhd I/F (Right)(DMS)	NT9X6536		2	26, 39		RUL18
DS30 Blkhd I/F (Right)(DMS)	NT9X6545		2	26, 39		RUL18
(Streamline)						
DS30 Blkhd I/F (Left) (DMS)	NT9X6546		2	26, 39		RUL18
(Streamline)						
Bulkhead coverplate assy.	NTEX5070			26, 39		RUL18
Screw Retainer	A0279319			26, 39		RUL18
Inter-MS DS-30 Cable Assy	NTEX5022			26, 39		RUL14
Inter-MS DS-30 Cable Assy	NTEX5023			26, 39		RUL15
Fiber Optic Cable	A0352268			26, 39		RUL16
Optical Fiber Label (Eng.)	P0736273			39, 26, 13		RUL17
Comp Mod Duplex Sh Assy	NT9X0605	CM	1	13		AP-01
Comp Mod Duplex Comm CP	NT9X06AD		1	13		AP
-5V 20A Power Conv.	NT9X31AA		2	13	1F, 33F	AP-03
+5V 80A Power Conv.	NT9X30AA		2	13	4F, 36F	AP-03
6MB Memory	NTZZ01KA			13	16F-7F	RUL2
24MB Memory	NTZZ01LA			13	16F-7F	RUL2
96MB Memory	NT9X14EA			13	16F-12F, 27F-23F	RUL2
Designation Label (NT9X14EA)	P0736863			13	16F-12F, 27F-23F	RUL2
Filler Face Plate	NTZZ01MA			13	16F-7F	RUL3

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
CPU Port CP	NT9X12AD		4	13	17F-18F, AP 21F-22F	
Des Label (NT9X12AD)	P0725905		4	13	17F, 18F, AP 21F, 22F	
Supernode Series 10 CPU CP	NTZZ01FA			13	19F	RUL8
Supernode Series 20 CPU CP	NTZZ01GA			13	19F	RUL8
Supernode Series 30 CPU CP	NTZZ01HA			13	19F	RUL8
Supernode Series 40 CPU CP	NTZZ01JA			13	19F	RUL8
# Supernode BRISC 50/60 CPU	NTZZ01SB			13	19F	RUL8
BRISC 50/50MX/60 CPU	NTZZ01SC			13	19F	RUL8
Supernode BRISC 70 CPU	NTZZ01SM			13	19F	RUL8
CPU (Static RAM) CP	NT9X13BC			13	19F, 20F	RUL8
33MHZ HPM-Based CPU Card	NT9X13GA			13	19F, 20F	RUL8
40MHZ 68030 CPU Board	NT9X13HB			13	19F, 20F	RUL8
Series 60 Upgrade Kit	NTZZ99AV					RUL8
Se. 60 Upg. Kit from Se. 50	NTZZ99AR					RUL8
CM Bus Terminator	NT9X21AA		2	13	7R, 32R	AP-03
Filler Face Plate	NT9X19BA			13	8R, 31R	RUL1
PB Filler Face Plate	NT9X19BA		14	13	9R-15R, AP 24R-30R	
Subsystem Clock	NT9X22CA		2	13	16R, 23R	AP-03
DS512 PB	NT9X20AA		4	13	17R-18R 21R-22R	AP-03
Shelf CP Fill Front Label	P0700719		1	13		AP-03
Shelf CP Fill Rear Label	P0678438		1	13		AP-03
Cable Bulkhead (right)	NT9X6539		1	13		AP
Cable Bulkhead (left)	NT9X6540		1	13		AP
RS232C & Curr Loop Ca Assy	NT9X0196		2	13		AP
CM SLM Ext Shelf Assy	NT9X0702	SLM	1	00		AP-01
SLM Common Module	NTZZ01BB			00		RUL1
Filler Packfill	NT9X01FB			00		RUL1
System Load Module II	NT9X44AB			00	8F, 24F	RUL1
System Load Module III	NT9X44AD			00	8F, 24F	RUL1
Des Label (NT9X44AD)	P0809344			00	8F, 24F	RUL1
Filler Face Plate	NT9X19AA			00	13, 14, 15 29, 30, 31	RUL1 RUL1
Cooling Unit	NT9X95CU		1			AP
Stand-alone Power Cab. kit	NT9X9532					RUL10
Horizontal Power Cab.kit	NT9X9531					RUL10
Terminal Block Desig. Strip	P0737633		1			RUL10
APC Cab. Power Filter Labels	P0736059		1			RUL10
ESP Ground Terminator Assy.	NT9X0324		1			RUL24
FSP Terminal Block (TB1)	A0368392		1	52		RUL25

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EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Cover Assembly C42 Cabinet Mechanical Assy	NT9X95BA					NOTE1

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTZZ01NM NTZZ01SB-Note 2	MD MD	NTZZ01NN NTZZ01SC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) Refer to NT9X95BA (EMA4-07-001) for additional mechanical hardware requirements for C42 Cabinet.
- 2) MD the NTZZ01SB when the NTZZ01SC becomes available.

RULES:

- AP 1) When PEC NTZZ01RF is ordered, these items are provided.
- AP-01 1) This PEC is always provided on the NT9X01JB cabinet and is indicated here for completeness.
- 2) Refer to NT9X95BA (EMA4-07-001) section for additional mechanical hardware requirements for C42 (S/DMS) Cabinet.

AP-02 1) Reserved for future use.

AP-03 1) This PEC is always provided on the NT9X06AD CM Common CP, and is indicated here for completeness.

RUL1 1) When the System Load Module (SLM) is a requirement, provide one (1) NTZZ01BB SLM Common fill and either two (2) NT9X44AB SLM II or two (2) NT944AD SLM III units. The SLM II is a hardware requirement for offices ordering NA001 or higher Product Layers.

SLM II requires software package NTXE54AA. The Device Independent Recording Package (DIRP) on SLM is optional, and it is activated internally by the presence of package module DIRPSLM in NTXJ44AA - SLM File System.

2) When the SLM is not a requirement, provide one (1) Filler Packfill NT9X01FB at shelf position 00, and two (2) Filler Face Plates, NT9X19BA, in shelf position 13 for card slots 8R,31R to satisfy the forced air cooling requirements of the frame.

3) Provide SLM III when either a disk drive capacity of 1 GByte or a maximum tape drive capacity of 500 MBytes are required in offices with a software load of NA004 or greater.

4) An upgrade from SLM II to SLM III is required when load image size exceeds 240 MBytes. The load image is not the same as CM load size. The formula for calculating load image is: $PS + .6*DS + .72*MS$, where PS = Program Store, DS = Data Store, and MS = Message Switch load size. The MS load size is 7M, 10M, or 16M depending on office configuration. 16M is the only MS load supported in NA004 and higher. The raw PS and DS values in KBytes can be obtained from MEMCALC and converted to MBytes by dividing by 1024. Due to limited availability, upgrades to SLM III should only be performed if required.

5) Provide six (6) NT9X19AA filler face plates when SLM III is provided.

6) Provide one (1) P0809344 Des Label for each SLM III card provisioned.

RUL2 1) Provision one (1) 24Mb Memory Circuit Pack, NTZZ01LA, for each 24Mb increment of memory required. A reminder that in addition to the operational memory provisioned, one extra memory CP must be provided per plane to be assigned as a

reliability spare. The NTZZ01KA 6 MByte CP will be provisioned for STP offices only.

- 2) All offices must equip the Memory CP to the following algorithm: Starting with 24 MByte CP for mixed offices, Slot 16F,15F,14F,13F,12F,11F,10F,09F,08F,07F
- 3) All BRISC Series 50 option offices with the NT9X26DB RTIF must use NT9X14DB only (BCS-33 and above).
- 4) BRISC Series 50 Mixed Memory offices, which must use the NT9X26DC RTIF, may use both the NT9X14DB and the NT9X14EA cards. If two (2) NT9X14EA cards per side are required, mount the cards in slots 15 and 16 for plane 0 and slots 23 and 24 for plane 1. If three (3) NT9X14EA cards per side are required, mount the cards on shelf 13, slots 14, 15, and 16 for plane 0 and slots 23, 24, and 25 for plane 1. NA004 and above is required for Series 50 Mixed Memory.

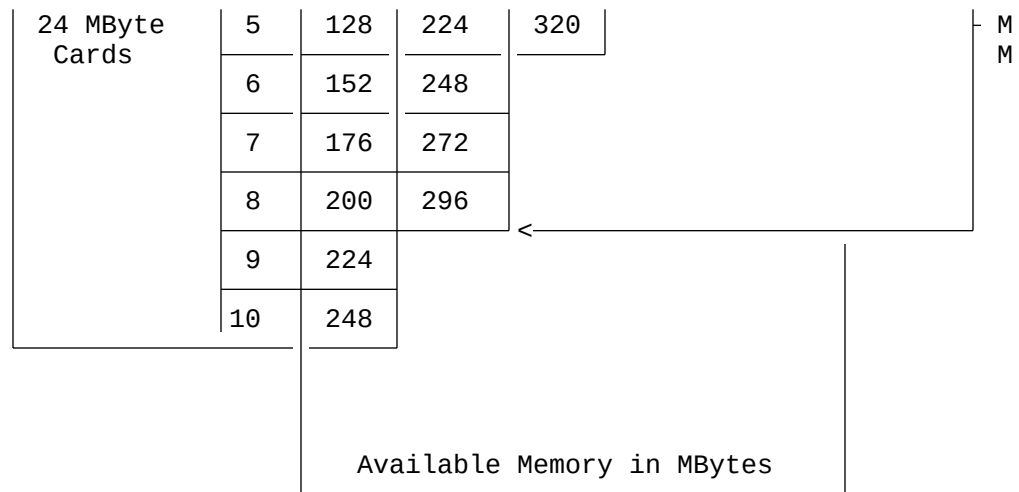
There must be a minimum of two (2) NT9X14EA per side for sparing purposes.

With two (2) NT9X14EA per side, the minimum number of NT9X14DB per side is four (4) and the maximum is eight (8).

With three (3) NT9X14EA per side, the minimum number of NT9X14DB per side is two (2) and the maximum is five (5).

Only the following memory configurations for Series 50 Mixed Memory are valid:

		SN50 only No. NT9X14EA 96 MByte Cards						
		0	2	3	4	5		
No. of NT9X14DB	0	xxx	128	224	320	400		← SN60
	2	56	xxx	248				5
	3	80	xxx	272				
	4	104	200	296				



Note: xxx in the preceding diagram represents an unsupported configuration.

- 5) All BRISC Series 60/70 option offices must use NT9X14EA memory only. BRISC Series 60 uses the NT9X26DB/DC RTIF and is limited to BCS-36 and above. BRISC Series 70 uses the NT9X26EA RTIF and is limited to NA004 and above.

Number NT9X14EA 96 MByte Cards (with spare)								
0	1	2	3	4	5	6	7	
xxx	xxx	128	224	320	416	512	yyy	<— SN60
224	256	352	448	544	640	736	yyy	<— SN70

Note: xxx in the preceding diagram represents an unsupported configuration.

Note: yyy in the preceding diagram represents a failure situation.

Note: 400 MBytes is currently the maximum addressable memory.

All offices must equip memory CP to the following algorithm: Starting with 1st. slots 16F and 23F, 2nd. 15F and 24F, 3rd. 14F and 25F, 4th. 13F and 26F, 5th. 12F and 27F, 6th. 11F and 28F, 7th. 10F and 29F, 8th. 9F and 30F, 9th. 8F and 31F, 10th 7F and 32F.

RUL3 1) Provision one (1) NTZZ01MA, Filler Face Plate in card slots (16F-07F) not equipped with a memory circuit pack, per the algorithm in RUL2.

RUL4 1) Non-cabinetized offices: Provide up to nine (9) NTZZ01CB to interface network modules and IOCs per the following formula:

$$\#NTZZ01CB = (\#NM/4) + (\#IOC/8)$$

Note: Round the formula result up to the next integer.

Each NTZZ01CB provides a total of four circuit packs and paddleboards. Two circuit packs and paddleboards are mounted on MS0 (shelf 26). The additional two circuit packs and paddleboards are mounted on MS1 (shelf 39).

Assign NTZZ01CB in the following order:
Slots 28,26,24,22,20,18,16,14,12

Each circuit pack contains four ports.

Each NM interface uses two ports per plane. The two NM ports per plane must be on separate, but adjacent circuit packs. Port assignments are recommended to proceed from higher number slots toward lower number slots.

Each IOC uses one port per plane. IOC:00 and IOC:01 have fixed assignments. IOC:00 is assigned to MS CP position 29, port 0. IOC:01 is assigned to MS CP position 28, port 0.

2) Non-cabinetized offices: Provide up to eight (8) NTZZ01DB to interface the LIM/LPP per the following formula:

$$\#NTZZ01DB = \#Link\ Interface\ Module\ Cabinets / 2$$

Note: Round the formula result up to the next integer.

Each NTZZ01DB provides a total of four circuit packs and paddleboards. Two circuit packs and paddleboards are mounted on MS0 (shelf 26). The additional two circuit packs and paddleboards are mounted on MS1 (shelf 39).

Assign NTZZ01DB in the following order:
Slots 26,24,22,20,18,16,14,12.

Each circuit pack contains four ports.

Each LIM/LPP interface uses four ports per plane. The LIM ports are assigned in pairs. The LIM/LPP port pairs must be on separate, but adjacent circuit packs. Port assignments are recommended to proceed from higher number slots toward lower number slots.

- 3) Non-cabinetized offices: The cables (NT9X0145) for offices containing NTZZ01CB or NTZZ01DB are connected from the NT9X23__ PBs to the DS_30 Bulkheads as follows:

FROM CONNECTOR P2 OF NT9X23__ IN PB POSITION	TO	
	CONN DESIG	BULKHEAD DESIGNATION
12R 13R 14R 15R 16R 17R 18R 19R 20R	A B C D E F G H I	DS30 BULKHEAD INTERFACE (RIGHT) NT9X6536
21R 22R 23R 24R 25R 26R 27R 28R 29R	G H I D E F A B C	DS30 BULKHEAD INTERFACE (LEFT) NT9X6556

- RUL5 1) Cabinetized offices, containing Model A or Model B cabinets: Provide up to five (5) NTZZ01UB to interface Network and IOC per the following formula:

$$\#NTZZ01UB = (\#NM/4) + (\#IOC/8)$$

Note: Round the formula result up to the next integer.

Each NTZZ01UB provides a total of four circuit packs and paddleboards. Two circuit packs and paddleboards are mounted in plane 0 (shelf 26). The additional two circuit packs and paddleboards are mounted in plane 1 (shelf 39).

Each circuit pack contains two ports.

Each NM uses two ports per plane. The two NM ports per plane must be on separate, but adjacent circuit packs. Each IOC uses one port per plane.

IOC:00 and IOC:01 have fixed assignments. IOC:00 is assigned to MS CP position 29, port 0. IOC:01 is assigned to MS CP position 28, port 0. Port assignments are recommended to proceed from higher number slots toward lower number slots.

Assign NTZZ01UB in the following order:
Slots 28,26,24,22,20

Note: Applications needing additional ports will require ENET.

- 2) Cabinetized offices, containing Model A or Model B cabinets: Provide up to four (4) NTZZ01VB to interface the LIM/LPP per the following formula:

$\#NTZZ01VB = \#Link\ Interface\ Module\ Cabinets / 2$

Note: Round the formula result up to the next integer.

Each NTZZ01VB provides a total of four circuit packs and paddleboards. Two circuit packs and paddleboards are mounted in plane 0 (shelf 26). The additional two circuit packs and paddleboards are mounted in plane 1 (shelf 39).

Assign NTZZ01VB in the following order:
Slots 26,24,22,20

Note: Applications needing additional ports will require ENET.

Each circuit pack contains two ports.

Each LIM/LPP interface uses four ports per plane. The LIM/LPP ports are assigned in pairs. The LIM/LPP port pairs must be on separate, but adjacent circuit packs. Port assignments are recommended to proceed from higher number slots toward lower number slots.

- 3) Cabinetized offices, containing Model A or Model B cabinets: The cables (NT9X6544) for offices containing NTZZ01UB and NTZZ01VB are connected from the NT9X23__ PBs to the DS_30 Bulkheads as follows:

CONNECT	FROM			TO	
CONNECTOR DESIGNATION	CARD SLOT	PORT	CONN	CONN DESIG	BULKHEAD DESIGNATION
(P2) ON NT9X23-- (DS30 4 PORT) CIRCUIT PACK	20R	0	P0	A0	DS30 BULKHEAD INTERFACE (RIGHT) REFERENCE NT9X6545
	20R	1	P1	A1	
	20R	2	P2	A2	
	20R	3	P3	A3	
	21R	0	P0	B0	
	21R	1	P1	B1	
	21R	2	P2	B2	
	21R	3	P3	B3	
	22R	0	P0	C0	
	22R	1	P1	C1	
	22R	2	P2	C2	
	22R	3	P3	C3	
	23R	0	P0	D0	
	23R	1	P1	D1	
	23R	2	P2	D2	
	23R	3	P3	D3	
	24R	0	P0	E0	
	24R	1	P1	E1	
	24R	2	P2	E2	
	24R	3	P3	E3	
	25R	0	P0	E0	DS30 BULKHEAD INTERFACE (LEFT) REFERENCE NT9X6546
	25R	1	P1	E1	
	25R	2	P2	E2	
	25R	3	P3	E3	
	26R	0	P0	D0	
	26R	1	P1	D1	
	26R	2	P2	D2	
	26R	3	P3	D3	
	27R	0	P0	C0	
	27R	1	P1	C1	
	27R	2	P2	C2	
	27R	3	P3	C3	
	28R	0	P0	B0	
	28R	1	P1	B1	
	28R	2	P2	B2	
	28R	3	P3	B3	
	29R	0	P0	A0	
	29R	1	P1	A1	
	29R	2	P2	A2	
	29R	3	P3	A3	

- RUL6 1) ENET Offices: For the first 64 Messaging Ports for each ENET shelf pair, provide two (2) NTZZ01NB. Two NTZZ01NB provide one (1) NT9X17DA and one (1) NT9X20BC for each of the four port groups. The port groups are defined as follows:

port group 1 = ENET shelf plane 0 / MS0 interface
port group 2 = ENET shelf plane 0 / MS1 interface
port group 3 = ENET shelf plane 1 / MS0 interface
port group 4 = ENET shelf plane 1 / MS1 interface

MS0 and MS1 together can accommodate up to eight (8) NTZZ01NB.

Each NTZZ01NB provides two circuit packs and paddleboards. One circuit pack is mounted in MS0 (shelf 26). The other circuit pack is mounted in MS1 (shelf 39).

Assign NTZZ01NB in the following order:
Slots 12,14,15...24,25,27.

It is recommended that port assignments proceed from lower number slots towards higher number slots.

- 2) ENET Offices: For the final 64 Messaging Ports for each ENET shelf pair, provide two (2) NTZZ01QA. Two NTZZ01QA provide one (1) NT9X17DA and one (1) NT9X25BA for each of the four port groups. The port groups are defined as follows:

port group 1 = ENET shelf plane 0 / MS0 interface
port group 2 = ENET shelf plane 0 / MS1 interface
port group 3 = ENET shelf plane 1 / MS0 interface
port group 4 = ENET shelf plane 1 / MS1 interface

MS0 and MS1 together can accommodate up to eight (8) NTZZ01QA.

Each NTZZ01QA provides two circuit packs and paddleboards. One circuit pack is mounted in plane 0 (shelf 26). The other circuit pack is mounted in plane 1 (shelf 39).

Assign NTZZ01QA in the following order:
13,14,15...25,26,27.

It is recommended that port assignments proceed from lower number slots toward higher number slots.

- 3) ENET Offices: When the port requirements exceed 128 Messaging Ports for each ENET shelf pair, provide two (2) NTZZ01PA for each additional 64 ports. Two NTZZ01PA provide one NT9X17DA and one NT9X25AA for each of the four port groups. The port groups are defined as follows:

port group 1 = ENET shelf plane 0 / MS0 interface
port group 2 = ENET shelf plane 0 / MS1 interface
port group 3 = ENET shelf plane 1 / MS0 interface
port group 4 = ENET shelf plane 1 / MS1 interface

MS0 and MS1 together can accommodate up to eight (8) NTZZ01PA.

Each NTZZ01PA provides two circuit packs and paddleboards. One circuit pack is mounted in MS0 (shelf 26). The other circuit pack is mounted in MS1 (shelf 39).

Assign NTZZ01PA in the following order:
13,14,15...24,25,26.

It is recommended that port assignments proceed from lower number slots toward higher number slots.

- 4) ENET Offices: For the first 128 Messaging Ports for each ENET shelf pair, two (2) NTZZ01NN instead of two (2) NTZZ01NB. Two NTZZ01NN provide one (1) NT9X17CA and one (1) NT9X20BC for each of the four port groups. The port groups are defined as follows:

port group 1 = ENET shelf plane 0 / MS0 interface
port group 2 = ENET shelf plane 0 / MS1 interface
port group 3 = ENET shelf plane 1 / MS0 interface
port group 4 = ENET shelf plane 1 / MS1 interface

MS0 and MS1 together can accommodate up to eight (8) NTZZ01NN.

Each NTZZ01NN provides two circuit packs and paddleboards. One circuit pack is mounted in plane 0 (shelf 26). The other circuit pack is mounted in plane 1 (shelf 39).

Assign NTZZ01NN in the following order:
Slots 12,13,14,...24,25,26.

It is recommended that port assignments proceed from lower number slots towards higher number slots.

Note: The NTZZ01NN requires BCS35 or higher.

- 5) ENET Offices: For the final 128 Messaging Ports for each ENET shelf pair, provide two (2) NTZZ01QM instead of two (2) NTZZ01QA. Two (2) NTZZ01QM provide one (1) NT9X17CA and one (1) NT9X25BA for each of the four port groups. The port groups are defined as follows:

port group 1 = ENET shelf plane 0 / MS0 interface
port group 2 = ENET shelf plane 0 / MS1 interface
port group 3 = ENET shelf plane 1 / MS0 interface
port group 4 = ENET shelf plane 1 / MS1 interface

MS0 and MS1 together can accomodate up to eight (8) NTZZ01QM.

Note: The NTZZ01QM requires BCS35 or higher.

Each NTZZ01QM provides two circuit packs and paddleboards. One circuit pack is mounted in plane 0 (shelf 26). The other circuit pack is mounted in plane 1 (shelf 39).

Assign NTZZ01QM in the following order:
13,14,15,...25,26,27.

It is recommended that port assignments proceed from lower number slots toward higher number slots.

Note: The NT9X17CA and NT9X17DAs can exist in the same port group. However, it is highly recommended that the 17CA occupy the head (first) position in the port group. There is not a significant time difference between switching the order of the cards and adding a card.

- 6) ENET Offices: Assign the ENET ports to the lowest numbered MS slots in ascending order starting from slot 12 (i.e. slots 12, 13, etc.). However, the SAEs and EAEs should anticipate and plan all future growth on each ENET shelf and provision the MS cards accordingly, by leaving a spare slot for future expansion as shown below.

For 64 Ports Requirement

	Front	Rear	
n	NT9X17DA	NT9X20BB	to Plane 0 of ENET
n+1			reserve for future growth

	Front	Rear	
n+2	NT9X17DA	NT9X20BB	to Plane 1 of ENET
n+3			reserve for future growth

For 128 Ports Requirement

	Front	Rear	
n	NT9X17DA	NT9X20BB	to Plane 0 of ENET
n+1	NT9X17DA	NT9X25BA	
n+2			reserve for future growth

	Front	Rear	
n+3	NT9X17DA	NT9X20BB	to Plane 1 of ENET
n+4	NT9X17DA	NT9X25BA	
n+5			reserve for future growth

	Front	Rear	
12	NT9X17DA	NT9X20BB	to Plane 0 of ENET, 192 PORTS
13	NT9X17DA	NT9X25AA	
14	NT9X17DA	NT9X25BA	
15	NT9X17DA	NT9X20BB	to Plane 1 of ENET, 192 PORTS
16	NT9X17DA	NT9X25AA	
17	NT9X17DA	NT9X25BA	

	Front	Rear	
12	NT9X17DA	NT9X20BB	to Plane 0 of ENET, 256 PORTS
13	NT9X17DA	NT9X25AA	
14	NT9X17DA	NT9X25AA	
15	NT9X17DA	NT9X25BA	
16	NT9X17DA	NT9X20BB	to Plane 1 of ENET, 256 PORTS
17	NT9X17DA	NT9X25AA	
18	NT9X17DA	NT9X25AA	
19	NT9X17DA	NT9X25BA	

- RUL7 1) Provide one (1) NTZZ01EA for card slots 12 through 29 (Front and Rear) not equipped with NTZZ01CA/CB, NTZZ01DA/DB, NTZZ01UA/UB, NTZZ01VA/VB, NTZZ01NA/NB, NTZZ01PA, NTZZ01QA, NTZZ01NM/NN, NTZZ01QM, or NTZZ01ZA.

Each NTZZ01EA contains circuit packs and paddleboards for one (1) card slot on shelves 26 and 39. NTZZ01EA can be assigned in card slots from 12 thru 29.

- RUL8 1) Provide one (1) NTZZ01FA CPU CP (for equipping card slots 19F and 20F) for each SuperNode Series 10 office. This processor has been Manufacture Discontinued. If an existing site is configured with a Series 10 processor, the customer is requested to contact the regional sales representative for details on how to upgrade to a Series 20 processor or higher for BCS-35 and above loads. See Section 4.1.2 ECM body for software packaging.
- 2) Provide one (1) NTZZ01GA CPU CP (for equipping card slots 19F and 20F) for each SuperNode Series 20 or STP office. The NT9X13BA and NT9X13BB CPU CP are to be replaced by the NTZZ01GA CPU CP at BCS 26. Note that the NT9X13BB is MD and replaced by the NT9X13BC.
- 3) Provide one (1) NTZZ01HA CPU CP (for equipping card slots 19F and 20F) for each SuperNode Series 30 office.
- 4) Provide one (1) NTZZ01JA CPU CP (for card slots 19F and 20F) for each SuperNode Series 40 office. (When upgrading

from one CPU to another only order the CPU, not the Building Block which comes with NT9X26ABs)

- 5) BRISC Series 50/50MX/60 offices: Provide one (1) NTZZ01SC BRISC CPU CP (for card slots 19F and 20F).
- 6) BRISC Series 70 offices: Provide one (1) NTZZ01SM BRISC CPU CP (for card slots 19F and 20F).
- 7) When upgrading Series 20, 30, or 40 CPU from one CPU to another, order the CPU only, not the Building Block which comes with additional NT9X26ABs. For Series 50/60 or Series 70, order the Building Block as specified below:

Note the CPU PECs as follows:

- a) SuperNode Series 20 offices: Provide two (2) NT9X13BC CPU (68030 20 MHz) Proc CP in card slots 19F and 20F.
- b) SuperNode Series 30 offices: Provide two (2) NT9X13GA CPU (68030 33 MHz) Proc CP in card slots 19F and 20F.
- c) SuperNode Series 40 offices: Provide two (2) NT9X13HB CPU (68030 40 MHz) Proc CP in card slots 19F and 20F.
- d) SuperNode Series 50/60 offices: Provide one (1) NTZZ01SC which fills card slots 19F, 20F, 19R, and 20R. This Building Block provides the 19R NT9X10AA CPU (88000 33 MHz) and the NT9X26DC paddleboard.
- e) SuperNode Series 70 offices: Provide one (1) NTZZ01SM which fills card slots 19F, 20F, 19R, and 20R. This Building Block provides the 19R NT9X10AB CPU (88110 60 MHz) and the NT9X26EA paddleboard.
- 8) For Canadian applications, the NTZZ99AV Series 60 Upgrade Kit can be provided for Series 10, 20, 30, or 40 offices that have NT9X12ABs and NT9X26ABs existing in the switch. This kit contains the processors, cpu port cards, (8) 96 MByte memory cards, RTIFs, and all of the associated labels. When this kit is ordered, do not provision the detail PECs associated with this kit. Note that the NT9X12AB is MD and replaced by the NT9X12AD.
- 9) For Canadian applications, the NTZZ99AR Series 60 Upgrade Kit From Series 50 can be provided for Series 50 offices. This kit contains (8) 96 MByte memory cards, RTIFs, and all of the associated labels. When this kit is ordered, do not provision the detail PECs associated with this kit.

- RUL9 1) Provide one (1) End of Aisle Lamp cable assembly (NT9X0146) for the last cabinet in the line-up. This cable should be provided during the M5 cabling spec. Refer to the CA drawing when this cable is required for end aisle cabling.
- 2) Provide one (1) End of Aisle Lamp cable assembly (NT9X0172) if the spares cabinet (NT9X01FA/NTRX49AA) is located between the NT9X01JB and the end of the line-up. This cable should be provided during the M5 cabling spec. Refer to the CA drawing when this cable is required for end aisle cabling.

- RUL10 1) Provide one (1) NT9X9532 stand-alone cabling interface kit when powering the NT9X01JB cabinet from the 7 foot PDC frame, OR powering from the new CPDC (NTRX31CA) cabinet, OR powering from the NTRX31AA or from the NTRX31BA CPDC cabinet which is in the different lineup than the NT9X01JB. This kit includes cables, filters, and miscellaneous mounting hardware.

When an NT9X9532 stand-alone cabling interface kit is required, P0736059 APC cabinet power filter labels are also required. Provide one (1) P0736059 per DPCC Cabinet requiring NT9X9532 interface kit.

- 2) Provide one (1) NT9X9531 horizontal power cabling interface kit when powering the NT9X01JB cabinet from the NTRX31AA, or from the NTRX31BA CPDC cabinet which is in the same lineup as the NT9X01JB. This kit includes power cables, terminal blocks, and miscellaneous mounting hardware.

When an NT9X9531 horizontal power cabling interface kit is required, a P0737633 DPCC terminal block designation strip is also required. Provide one (1) P0737633 DPCC terminal block designation strip per DPCC requiring the NT9X9531 interface kit.

RUL11 Deleted.

- RUL12 1) Provide one (1) NTZZ01ZA (Link Interface to FLIS/APC) to interface to a FLIS in an Enhanced Multi-Purpose Cabinet or an Application-File Processor in an APC Cabinet.

RUL13 1) Reserved.

- RUL14 1) Provide NTEX5022 Cable for Inter-MS link option when interfacing with fiber link interface shelf (FLIS) for connection between MS0 and MS1 when copper connection is

required for DS-30 paddleboards when supernode cabinets are provisioned.

- RUL15 1) Provide NTEX5023 Cable for Inter-MS link option when interfacing with fiber link interface shelf (FLIS) for connection between MS0 and MS1 when copper connection is required for DS-30 paddleboards when streamline cabinets are provisioned.
- RUL16 1) Provide A0352268 Cable for Inter-MS link option for connection between MS0 and MS1 when fiber optic connection is required for DS-512 paddleboards. This is not yet verified for FLIS application.
- RUL17 1) Provide two (2) P0736273 Optical Fiber Label when adding paddleboard that required fiber optic connections. (ie. NT9X20xx etc.)
- 2) Provide two (2) P0736273 Optical Fiber Labels according to customer safety regulations that require labels for SuperNode cabinets provisioned with fiber optic cables.
- RUL18 1) Provide one (1) NT9X6556 MS Bulkhead Interface Left and one (1) NT9X6536 DS-30 Bulkhead Interface Right per MS shelf in NT9X01JB Cabinet for non-Cabinetized DMS (stand-alone) application.
- 2) Provide one (1) NT9X6546 DS-30 Bulkhead Interface Left and one (1) NT9X6545 DS-30 Bulkhead Interface Right per MS shelf in NT9X01JB Cabinet for Cabinetized DMS (streamline) application. Also Provide one (1) NTEX5070 Bulkhead cover plate assembly and one (1) A0279319 screw retainer for each unequipped connector position in the NT9X6545 and NT9X6546 Bulkheads per the following formula:
- $$\#NTEX5070 = 80 - 16 * (\#NTZZ01UB/VB)$$
- RUL19 1) Provide one (1) CPU 16MHZ CP (NT9X13DC) in card slot POS 9F in shelf position 26,39 for applications in BCS-29 and higher BCS. The NT9X13DC should not be ordered on new jobs that are BCS-35 and higher.
- 2) Provide one (1) CPU 16 MHZ CP (NT9X13DD) in card slot POS 9F in shelf position 26,39 for applications in BCS-35 and higher. This is not a BCS gating requirement. Check availability with PLM/NPPM before ordering.
- 3) Provide one Designation Label corresponding to the card provided.

- RUL20 1) Depending on the memory requirements on the Message Switch provide the following.

NOTE: the NT9X13DD is not compatible with the NT9X14BB.

- 2) If an NT9X14BB or NT9X14DB is not used on the message switch, then provide two (2) NT9X19AA to fill the empty slot 10F.
- 3) PM Note: New SN DPCCs should not be provided with the NT9X14BB MS memory for BCS-31 and above loads. Also, Offices with NA004 or higher require a minimum of 16M of memory and there will be only one common MS load.

Memory Required on the Message Switch	Circuit Packs Required Per MS PLANE
10 Meg	(1)NT9X13DC (1)NT9X14BB
16 Meg	(1)NT9X13DD
28 Meg	(1)NT9X13DC (1)NT9X14DB
40 Meg	(1)NT9X13DD (1)NT9X14DB

- RUL21 1) Provide one (1) NT9X53AD Combined Clock CP in card slot 8F in shelf position 26,39 for NA001 and higher. For Stratum 2 configurations, provision the NT9X53AC instead of the 9X53AD.

Note that, the NT9X53AB requires BCS28 or higher. NT9X53AC is incompatible with BCS30 or older BCS's. NT9X53AD is incompatible with BCS36 or older BCSs.

- 2) Provide the appropriate designation labels.

RUL22 Deleted.

RUL23 Deleted.

RUL24 1) Provide one (1) NT9X0324 ESP Ground Terminator Assembly in all British Telephone systems.

RUL25) 1) Provide one (1) A0368392 in all international applications.

SUPERNODE SE ENI COMMON CP (-60V)

PEC CODE: NTZZ34KA

CPC CODE: B0237612

| RATING: MD

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME:

ENGINEERING DESCRIPTION: Provides the components required to support
the ENET shelf in -60V applications.REFERENCE DOCUMENTATION: SLZZ34KA 00 01
NTZZ34KA REL 01

MARKETS: Applicable markets:

Europe

| ISSUE AUTHOR: NTC: Jerry Palmer Dept. S646 (PPK)

MAIN CONTACT: NTC: Ganesh Ram Dept. S646 (BRW)

NTZZ34KA EMC4-06-ENI-60V CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
92 10 23	API 211 05	New insert.
93 04 07	API 211 07	This BB is for Germany only.
93 08 10	ECM 632 06	NTZZ34KA is Standard in -60V appl.
96 03 28	ECM 632 18	MD section as no longer required.

The SuperNode SE ENI Common CP (-60V) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-5V Power Converter	NT9X31AB		2	13	01F, 33F	AP
+5V Power Converter	NT9X30AB		2	13	04F, 36F	AP
Design Label (NT9X31AB)	P0709513		2	13	01F, 33F	AP
Design Label (NT9X30AB)	P0737682		2	13	04F, 36F	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

AP 1) When PEC NTZZ34KA is ordered, these items are provided.

DMS SUPERNODE SE
COMBINED CABINET

NTZZ34AA

RATING: MD

ABBREVIATION NAME: SCC

ENGINEERING DESCRIPTION: The DMS SuperNode SE Combined Cabinet houses a Computing Module (CM), a System Load Module 1A (SLM1A), a Message Switch (MS), an Enhanced Network (ENET) and a Link Interface Shelf (LIS).

The NTZZ34AB Building Block replaces the NTZZ34AA for new applications that utilize -48V power.

If a -60V application is being provisioned, use the NTZZ34MA Building Block.

REFERENCE DOCUMENTATION: SLZZ34AA 00 05 REL 01
MS9X01MB 01 03 REL 03
SL9X01MB 00 05 REL 03

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA
Carrier
Wireless

NTZZ34AA EMC4-06-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 04 28	ECM 632 01	First Issue of insert
92 09 29	ECM 632 02	Add Streamline information
92 11 02	ECM 632 03	MD, Fix misc erros and ommissions. ET15119: Add note stating that the 22 isolation boots are to be shipped to site, not installed in the mfg shop. ECD Replace -48V cooling unit 18-39706 'A' code with NT9X95CU pec code, C42 clean-up ECD.

The DMS SuperNode SE Combined Cabinet is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
DMS SuperNode SE Core Cabnt	NT9X01MB		1			AP
Cabinet Mechanical Hardware						RUL13
Misc Hardware - Grey	NTZZ30JA		1			RUL13
Misc Hardware - Brown	NTZZ30KA		1			RUL13
Cable Trough (Brown)	NT0X24BH		1			RUL13
End Panel Assy Kit (Brown)	NTRX07AE		2			RUL13
Cable Trough (Grey)	NT0X25AX		1			RUL13
End Panel Assy Kit (Grey)	NTRX07AB		2			RUL13
E-CORE Frame Supv Panel	NT9X03AA		1			RUL13
Cooling Unit (-48V)	NT9X95CU		1			RUL13
Stand-alone Power Cab. kit	NT9X9532		1			RUL14
Horizontal Power Cab.kit	NT9X9531		1			RUL14
EMI Contact Strips	P0714698		2			RUL14

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Message Switch Shelf Assy	NT9X0470		1	39		AP-01
-5V Power Converter	NT9X31AA		2	39	01F, 33F	AP
+5V Power Converter	NT9X30AA		2	39	04F, 36F	AP
T-Bus Terminator CP	NT9X49CC		2	39	07F, 32F	AP
Mapper CP	NT9X15AA		2	39	09F, 30F	AP
4-Port MS I/F CP	NT9X17AD		4	39	10F, 16F, 23F, 29F	AP
MS Processor CP	NT9X13NA		2	39	17F, 22F	AP
Combined Clock CP	NT9X53AC		2	39	18F, 21F	AP
T-Bus Access CP	NT9X52AA		2	39	19F, 20F	AP
4-Link DS30 PB	NT9X23AA		2	39	10R, 29R	AP
DS30 Cable Assembly	NT9X0434		2	39		RUL2
DS30 Cable Assembly	NT9X0474		2	39		RUL2
DS30 Cable Assembly	NT9X6544		2	39		RUL2
16-Link DS30 PB	NT9X69BA			39	11R, 28R 12R, 27R 13R, 26R 14R, 25R	RUL2
DS30 Cable Assembly	NT9X0520			39		RUL2
DS30 Cable Assembly	NT9X0477			39		RUL2
DS30 Cable Assembly	NT9X0483			39		RUL2
2-Link SR512 PB	NT9X62CA		2	39	16R, 23R	AP
2-Link SR512 PB	NT9X62CA			39	15R, 24R 14R, 25R 13R, 26R	RUL3
RTIF PB	NT9X26AB		2	39	17R, 22R	AP
Clock Interface PB	NT9X54AC		2	39	18R, 21R	AP
DS30 Cable Assembly	NT9X0434		2	39		RUL11
DS30 Cable Assembly	NT9X0474		2	39		RUL11
DS30 Cable Assembly	NT9X6544		2	39		RUL11
MS Clock Cable Assembly	NT9X0436		1	39		AP
MS Clock Cable Assembly	NT9X0437		1	39		AP
Cable Assembly	NT9X0438		4	39		AP
IML DS30 Cable Assembly	NT9X0475		2	39		RUL11
IML DS30 Cable Assembly	NT9X0433		2	39		RUL11
IML IOC0 Cable Assembly	NT9X0478		1	39		RUL11
IML IOC1 Cable Assembly	NT9X0479		1	39		RUL11
MS0-MS1 Cable Assembly	NTEX5026		1	39		AP
MS Bulkhead Assembly (left)	NT9X6550		1	39		RUL11
MS Bulkhead Assembly (right)	NT9X6551		1	39		RUL11
MS Bulkhead Assembly (right)	NT9X6561		1	39		RUL11
MS Bulkhead Assembly (left)	NT9X6560		1	39		RUL11
Streamline Bulkhead (right)	NT9X6568		1	39		RUL11
Streamline Bulkhead (left)	NT9X6567		1	39		RUL11
IML IOC0 Cable Assembly	NT9X0480		1	39		RUL11
IML IOC1 Cable Assembly	NT9X0481		1	39		RUL11

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
DMS SNSE MS LIS/ENI I/F	NTZZ34CA		1	39		RUL1
DMS SNSE MS 8xDS30 I/F	NTZZ34JA		1	39		RUL2
DMS SNSE MS 32xDS30 I/F	NTZZ34DA		1	39		RUL2
4-Port MS I/F CP	NT9X17AD			39	11F-15F, 24F-28F	RUL3
32-Port MS I/F CP	NT9X17BB			39	11F-15F, 24F-28F	RUL3
64-Port MS I/F CP	NT9X17DA			39	11F-15F, 24F-28F	RUL3
4-Link DS30 PB	NT9X23AA		4	39	11R,12R, 27R,28R	RUL3
DS30 Cable Assembly	NT9X0434		4	39		RUL3
DS30 Cable Assembly	NT9X0474		4	39		RUL3
DS30 Cable Assembly	NT9X6544		4	39		RUL3
MS Port Expander PB	NT9X25BA			39	13R,14R, 25R,26R	RUL3
MS Port Expander PB	NT9X25AA			39	14R,25R	RUL3
Filler Face Plate	NT9X19AA			39		RUL4
PB Filler Face Plate	NT9X19BA			39		RUL4
Shelf Strip, MS (front)	P0739089		1	39		AP-01
Shelf Strip, MS (rear, bot)	P0739090		1	39		AP-01
Shelf Strip, MS (rear, top)	P0739091		1	39		AP-01
Design Strip, MS (front)	P0739092		1	39		AP
MS Shelf Front Warning Label	P0737148		1	39		AP
MS Shelf Rear Warning Label	P0737149		1	39		AP
Design Label (NT9X17AD)	P0735096		2	39	11F,28F	RUL12
Design Label (NT9X17BB)	P0726962			39	13F-15F, 24F-26F	RUL12
Design Label (NT9X17DA)	P0707891			39	13F-15F, 24F-26F	RUL12
Design Label (NT9X23AA)	P0678443		2	39	11R,28R	RUL12
Design Label (NT9X62CA)	P0735105		2	39	15R,24R	RUL12

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Link Interface Shelf Assy	NT9X7204		1	26		AP
DMS SNSE LIS Common CP	NTZZ34EA		1	26	1F	RUL5
Bulkhead Assembly	NT9X6534		2	26		RUL5
Cover Plate	NTEX5025		32	26		RUL5
Filler Packfill	NT9X01FB		1	26	01F	RUL5
FSP Shorting Plug	NT9X0314		2	26		RUL5
Filler Face Plate	NT9X19AA		26	26	07F-32F	RUL5,6
PB Filler Face Plate	NT9X19BA		26	26	07R-32R	RUL5,6
CCS7 8 Meg LIU (DS0A)	NTZZ30TA			26	08F,10F, 12F,14F, 16F,18F, 20F,22F, 24F,26F, 28F,30F	RUL6
CCS7 8 Meg LIU (E-DS0A)	NTZZ30UA			26	08F,10F, 12F,14F, 16F,18F, 20F,22F, 24F,26F, 28F,30F	RUL6
CCS7 8 Meg LIU (E/HC-DS0A)	NTZZ30VA			26	08F,10F, 12F,14F, 16F,18F, 20F,22F, 24F,26F, 28F,30F	RUL6
CCS7 8 Meg LIU (V.35)	NTZZ30WA			26	08F,10F, 12F,14F, 16F,18F, 20F,22F, 24F,26F, 28F,30F	RUL6
Shelf Strip, LIS (front)	P0739094		1	26		AP-02
Shelf Strip, LIS (rear, bot)	P0739095		1	26		AP
Shelf Strip, LIS (rear, top)	P0739096		1	26		AP
Design Strip, LIS (front)	P0739097		1	26		AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
ENI Shelf Assembly	NT9X0810		1	13		AP
Filler Packfill	NT9X01FB		1	26	01F	RUL7
FSP Shorting Plug	NT9X0314		2	13		RUL7
Filler Face Plate	NT9X19AA		26	13	07F-32F	RUL7
PB Filler Face Plate	NT9X19BA		26	13	07R-32R	RUL7
Bulkhead Assembly (left)	NT9X6520		1	13		RUL9
Bulkhead Assembly (right)	NT9X6521		1	13		RUL9
Bulkhead Assembly (left)	NT9X6530		1	13		RUL7,9
Bulkhead Assembly (right)	NT9X6531		1	13		RUL7,9
Bulkhead Assembly	NT9X0813		2	13		RUL7,9
Streamline Bulkhead Assembly	NT9X8909		2	13		RUL7,9
DMS SNSE ENI Common CP	NTZZ34BA		1	13		RUL9
DMS SNSE ENI F-Bus Common CP	NTZZ34GA		1	13		RUL8
CCS7 8 Meg LIU (DS0A)	NTZZ30TA			13	08F,30F,	RUL8
CCS7 8 Meg LIU (E-DS0A)	NTZZ30UA			13	08F,30F,	RUL8
CCS7 8 Meg LIU (E/HC-DS0A)	NTZZ30VA			13	08F,30F,	RUL8
CCS7 8 Meg LIU (V.35)	NTZZ30WA			13	08F,30F,	RUL8
DMS SNSE 4K ENET	NTZZ34FA		1	13		RUL9
8K Crosspoint CP	NT9X35FA			13	14F-19F, 24F-29F	RUL9
4-Port DS512 Fiber I/F PB	NT9X40BA			13	14R-19R, 24R-29R	RUL9
16-Port DS30 PB	NT9X41BA			13	14R-19R, 24R-29R	RUL9
3-Port DS512 16-Port DS30 PB	NT9X45BA			13	14R-19R, 24R-29R	RUL9
Cable Assembly	NT9X0520			13		RUL9
Cable Assembly	NT9X0524			13		RUL9
Cable Assembly	NT9X0540			13		RUL9
Cable Assembly	NT9X0542			13		RUL9
Cable Assembly (Meridian)	NT9X0815			13		RUL9
Cable Assembly (Meridian)	NT9X0817			13		RUL9
Cable Assy (Streamline, XPM)	NT9X0546			13		RUL9
Cable Assy (Streamline, SLC)	NT9X0544			13		RUL9
Cable Assy (Streamline, XPM)	NT9X0547			13		RUL9
Cable Assy (Streamline, SLC)	NT9X0545			13		RUL9

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Design Label (NT9X35FA)	P0735098			13	14F-19F, 24F-29F	RUL12
Design Label (NT9X40BA)	P0704527			13	14R-19R, 24R-29R	RUL12
Design Label (NT9X41BA)	P0704528			13	14R-19R, 24R-29R	RUL12
Design Label (NT9X45BA)	P0731527			13	14R-19R, 24R-29R	RUL12
Shelf Strip, ENI (front)	P0739099		1	13		AP-03
Shelf Strip, ENI (rear, bot)	P0739100		1	13		AP
Shelf Strip, ENI (rear, top)	P0739101		1	13		AP
Design Strip, ENI (front)	P0739102		1	13		AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Cmp Mod Sys Load Mod Sh Assy	NT9X0610		1	00		AP-01
+5V/+12V Power Conv	NT9X91AA		2	00	01F, 36F	AP
+5V/-5V Power Conv	NTDX15AA		2	00	04F, 33F	AP
System Load Module 1A	NT9X44AC		2	00	07F, 28F	AP
CPU Port CP	NT9X12AC		2	00	17F, 22F	AP
Dual Port Msg Controller CP	NT9X86AA		2	00	18F, 21F	AP
CM Processor CP	NT9X13MA		2	00	19F, 20F	AP
Parallel Port Interface PB	NT9X46AA		4	00	07R, 17R 22R, 28R	AP
P-Bus Terminator PB	NT9X21AB		2	00	12R, 27R	AP
2-Link SR512 PB	NT9X62AA		2	00	18R, 21R	AP
RTIF PB	NT9X26AB		2	00	19R, 20R	AP
CM Extension Cable Assembly	NT9X0167		2	00		AP
E/W 2-25 Pin Cable Assembly	NT9X0160		2	00		AP
RS-232C/Curr Loop Cable Assy	NT9X0196		2	00		AP
Cable Assembly	A0379486		8	00		AP
ENET-CM/SLM Bulkhead Assy	NT9X6552		2	00		RUL7,9
CM/SLM Bulkhead Assy	NT9X6553		2	00		RUL7,9
24 Meg Memory CP	NT9X14DB			00	12F-16F, 23F-27F	RUL10
Filler Face Plate	NT9X19AA			00	AR	RUL4
PB Filler Face Plate	NT9X19BA			00	AR	RUL4
Design Label (NT9X14DB)	P0700802			00	12F-16F, 23F-27F	RUL12
CM/SLM Shelf (rear strip)	P0735782		1	00		AP
Shelf Strip, CM/SLM (front)	P0739104		1	00		AP-01
Shelf Strip, CM/SLM (rear,b)	P0739105		1	00		AP-01
Shelf Strip, CM/SLM (rear,t)	P0739106		1	00		AP-01
Design Strip, CM/SLM (front)	P0739107		1	00		AP

FLAGS:

NOTES:

RULES:

- AP 1) When PEC NTZZ34AA is ordered, these items are provided.
- AP-01 1) These items are provided with NT9X01MB and are listed here for reference.
- AP-02 1) These items are provided with NT9X7204 and are listed here for reference.
- AP-03 1) These items are provided with NT9X0810 and are listed here for reference.
- RUL1 1) If ASUs are provisioned on either the LIS or ENI shelf, provide:
one (1) NTZZ34CA DMS SuperNode SE MS LIS/ENI Interface.
- RUL2 1) MS DS-30 Ports

A minimum of four (4) DS-30 ports are provided in NTZZ34AB slot 10 (MS 0.0) and slot 29 (MS 1.0) for mandatory IOC and IML ports.
This minimal requirement is met when the NTZZ34AB Building Block containing:

two (2) NT9X17AD slots 10F, 29F and

two (2) NT9X23AA slots 10R, 29R

is ordered.

Order the appropriate cables for the two always provided DS30 paddleboards with respect to standard, Meridian and Streamline bulkheads.

For NT9X23AA DS30 paddleboard provide:

two (2) NT9X0434 DS30 Cable Assemblies
for standard applications,
OR
two (2) NT9X0474 DS30 Cable Assemblies
for Meridian applications,
OR
two (2) NT9X6544 DS30 Cable Assemblies
for Streamline applications.
- 2) For four (4) additional DS-30 ports for IOC and JNETSs, provide:

two (2) NT9X17AD slots 11F, 28F and
two (2) NT9X23AA slots 11R, 28R

- 3) Additional DS-30 ports can be provided for JNETs only by using:

NT9X17BB circuit packs with NT9X69BA paddleboards,
in available unequipped slots 12 to 14, 24 to 27.

- 4) Additional DS-30 ports can be provided for up to three (3) LPPs and two (2) IMLs by using:

two (2) NT9X17BB circuit packs with
two (2) NT9X69BA paddleboards,

in available unequipped slots 11, 28.

Note: LPP/IML is the only allowed port mixture for LPPs. LPPs cannot occupy ports on the same card as JNETs due to hardware contention problems. LPPs and JNETs do not function when they are assigned to ports on the same MS card.

Order the appropriate cables for the DS30 paddleboards with respect to standard, Meridian and Streamline bulkheads.

For each NT9X23AA DS30 paddleboard provide:

one (1) NT9X0434 DS30 Cable Assembly
for standard applications,

OR

one (1) NT9X0474 DS30 Cable Assembly
for Meridian applications,

OR

one (1) NT9X6544 DS30 Cable Assembly
for Streamline applications.

For each NT9X69BA DS30 paddleboard provide:

one (1) NT9X0520 DS30 Cable Assembly
for standard applications,

OR

one (1) NT9X0477 DS30 Cable Assembly
for Meridian applications,

OR

one (1) NT9X0483 DS30 Cable Assembly
for Streamline applications.

- 5) To support up to four (4) JNET network modules, provision one (1) NTZZ34JA DMS SuperNode SE MS 8xDS30 Interface.

- 6) To support up to ten (10) JNET network modules and up to six (6) IOCs, provision one (1) NTZZ34DA DMS SuperNode SE MS 32xDS30 Interface.
- 7) The maximum number of JNET network modules that may be provisioned is seven (7) for LEC/IEC markets, except for MSL applications where the limit is ten (10).
- 8) The provisioning of two NT9X17AD/NT9X23AA pair combinations (four circuit packs) adds capacity for two (2) JNET modules, or one (1) JNET module and two (2) IOCs. Since the NT9X17AD/NT9X23AA circuit pack combination supports both JNET and IOCs, the two can be mixed to optimize MS port utilization when engineering an office. These are the same rules applicable to the regular SuperNode, bearing in mind the engineering capacities dictated in these engineering rules for LEC, IEC and MSL markets.

- RUL3 1) Use the following table to provide the circuit packs necessary for the required maximum number of MS and ENET ports.

Max MS Ports	Max ENET Msg ports per ENET plane	slot 15 & 24		slot 14 & 25		slot 13 & 26	
		Front	Rear	Front	Rear	Front	Rear
32	15	17BB	62CA	-	-	-	-
64	31	17DA	62CA	-	-	-	-
96	47	17BB	62CA	17BB	25BA	-	-
		17DA	62CA	17BB	25BA	-	-
		17BB	62CA	17DA	25BA	-	-
128	63	17DA	62CA	17DA	25BA	-	-
160	79	*17CA	62CA	-	-	-	-
		*17CA	62CA	17BB	25BA	-	-
		17BB	62CA	*17CA	25BA	-	-
192	95	17DA	62CA	17DA	25AA	17DA	25BA
256	127	*17CA	62CA	17DA	25BA	-	-
		17DA	62CA	*17CA	25BA	-	-
		*17CA	62CA	*17CA	25BA	-	-

* The NT9X17CA is a 128 port card that is available in BCS35 for Verification Offices (VOs). The circuit pack will attain General Availability (GA) in BCS36.

The slots 13F/R and 26F/R can be used for additional MS ports, but the growth capacity of the SuperNode SE Message Switch is reduced when these slots are provisioned with MS port cards for ENET or JNETs.

The circuit pack fill order is:

- 1) 15F/R (MS 0.0) and 24F/R (MS 1.0),
- 2) 14F/R (MS 0.0) and 25F/R (MS 1.0).
- 2) 13F/R (MS 0.0) and 26F/R (MS 1.0).

Note:

The NT9X25BA is always provided as the last paddleboard in an MS port card chain. When chains of three or more cards are provisioned, the intermediate chained slots use the NT9X25AA paddleboard.

For example, provisioning 192 MS ports with three NT9X17DA circuit packs:

Max MS Ports	Msg ports ENET plane	slot 15 & 24		slot 14 & 25		slot 13 & 26	
		Front	Rear	Front	Rear	Front	Rear
192	95	17DA	62CA	17DA	25AA	17DA	25BA

- 2) To support ENET and up to 15 peripheral message ports per ENET plane, provision two (2) NT9X17BB 32-Port MS Interface Circuit Packs in slot positions 15F and 24F, and two (2) NT9X62CA 2-Link SR512 Paddleboards in slot positions 15R and 24R.
- 3) To support ENET and up to 31 peripheral message ports per ENET plane, provision two (2) NT9X17DA 64-Port MS Interface Circuit Packs in slot positions 15F and 24F, and two (2) NT9X62CA 2-Link SR512 Paddleboards in slot positions 15R and 24R.
- 4) To provide 16 or 32 peripheral message ports per ENET plane in addition to the ports provided in 2) or 3) above, provision

two (2) NT9X17BB 32-Port MS Interface Circuit Packs (for 16 additional ports) or
two (2) NT9X17DA 64-Port MS Interface Circuit Packs (for 32 additional ports) in slot positions 14F and 25F,
and
two (2) NT9X25BA MS Port Expander Paddleboards in slot positions 14R and 25R.

In BCS34, the NT9X17BB and NT9X17DA circuit packs may not be mixed; therefore, the NT9X17DA is preferable to ensure maximum growth potential. This restriction is removed with BCS35.

- 5) To provide 16 or 32 peripheral message ports per ENET plane in addition to the ports provided in 4) above, provision two (2) NT9X17BB 32-Port MS Interface Circuit Packs (for 16 additional ports)

or

two (2) NT9X17DA 64-Port MS Interface Circuit Packs (for 32 additional ports) in slot positions 13F and 26F,
and
two (2) NT9X25BA MS Port Expander Paddleboards in slot positions 13R and 26R. Also provision
two (2) NT9X25AA MS Port Expander Paddleboards
instead of
two (2) NT9X25BA MS Port Expander Paddleboards in slot positions 14R and 25R.

In BCS34, the NT9X17BB and NT9X17DA circuit packs may not be mixed; therefore, the NT9X17DA is preferable to ensure maximum growth potential. This restriction is removed with BCS35.

- 6) To support up to four (4) additional IOCs with ENET, provide:
two (2) NT9X17AD 4-Port MS Interface Circuit Packs and
two (2) NT9X23AA 4-Link DS30 Paddleboards.

Since ENET and JNET cannot interwork with each other, the SuperNode SE NT9X17AD/NT9X23AA circuit board combination can only be used for IOCs when ENET is employed on the SuperNode SE frame.

IOCs cannot be connected to a 16-port NT9X69BA paddleboard at this time.

The four additional IOCs in addition to the initial two IOCs give the maximum allowable IOCs for the SuperNode SE of six (6) for the LEC/IEC markets.

The addition of two NT9X17AD/NT9X23AA pair combinations adds capacity for another four (4) IOCs to bring the maximum to ten (10) IOCs for the MSL markets.

Order the appropriate cables for the DS30 paddleboards with respect to standard, Meridian and Streamline bulkheads.

For each NT9X23AA DS30 paddleboard provide:

one (1) NT9X0434 DS30 Cable Assembly
for standard applications,
OR
one (1) NT9X0474 DS30 Cable Assembly
for Meridian applications,
OR
one (1) NT9X6544 DS30 Cable Assembly
for Streamline applications.

7) SR512 Ports

To add FLIS provide:

two (2) NT9X17AD and two (2) NT9X62BA.

To add AP/FP provide:

two (2) NT9X17DA and two (2) NT9X62BA.

Provision these cards in available slots 15 to 11 and 24 to 28.

RUL4 1) Provision NT9X19AA Filler Face Plates and NT9X19BA Paddleboard Filler Face Plates for all unoccupied slots.

RUL5 1) Provide:

one (1) NTZZ34EA DMS SNSE LIS Common CP
in shelf position 26 if LIUs are to be provisioned.

Otherwise, provision as in 3).

Bulkheads MUST ALWAYS be provided on the LIS shelf, even if fillers are the only packs shipped with the SuperNode SE cabinet.

2) Provide NT9X19AA Filler Face Plates and NT9X19BA Filler paddleboards in all unoccupied slots.

- 3) If LIU functionality is not required on the LIS shelf, provide:

one (1) NT9X01FB Filler Packfill,
two (2) NT9X0314 FSP Shorting Plugs (B0225296),
two (2) NT9X6534 LIS Bulkhead Assemblies,
and
thirty-two (32) NTEX5025 Cover Plates.

The NT9X01FB filler packfill contains:

four (4) NT9X19CA Power Filler Face Plates,
twenty-six (26) NT9X19AA Filler Face Plates and
twenty-six (26) NT9X19BA Paddleboard Filler Face Plates,

- RUL6 1) Provision any combination of:

NTZZ30TA CCS7 8 Meg LIU (DS0A)

NTZZ30UA CCS7 8 Meg LIU (E-DS0A)

NTZZ30VA CCS7 8 Meg LIU (E/HC-DS0A)

NTZZ30WA CCS7 8 Meg LIU (V.35)

A total of up to twelve (12) LIUs may be provisioned on the LIS.

- 2) Provide NT9X19AA Front Filler circuit packs and NT9X19BA Rear Filler paddleboards for all unequipped slots in the LIS shelf.

- RUL7 1) If ENET or LIU functionality is not required and the cabinet is to be shipped with an empty ENI Shelf Assembly, provide:

one (1) NT9X01FB Filler Packfill,
two (2) NT9X0314 FSP Shorting Plugs (B0225296),

two (2) ENI bulkheads.
and
two (2) CM/SLM bulkheads.

The NT9X01FB filler packfill contains:

four (4) NT9X19CA Power Pack Fillers,
twenty-six (26) NT9X19AA Filler Face Plates,
twenty-six (26) NT9X19BA Paddleboard Filler Face Plates.

- 2) The ENI and CM/SLM bulkheads are provisioned as follows:

For standard applications provision:

one (1) NT9X6520 Bulkhead Assembly (left),
one (1) NT9X6521 Bulkhead Assembly (right),
and
two (2) NT9X6553 CM/SLM Bulkhead Assemblies.

- 3) For Meridian applications, provision:

two (2) NT9X0813 Bulkhead Assemblies,
and
two (2) NT9X6553 CM/SLM Bulkhead Assemblies.

- 4) For Streamline applications, provision:

two (2) NT9X8909 Streamline Bulkhead Assemblies,
and
two (2) NT9X6553 CM/SLM Bulkhead Assemblies.

- 5) If an application requires a 4-link SR512 PB, provide the NT9X62BA paddleboard.

When providing an Application Processor Cabinet (APC) to be connected to a SuperNode SE, an NT9X62BA must be provided in the MS shelf.

The NT9X62BA cannot be used for CMIC links. The NT9X62CA is the only CP that can be used for CMIC links at this time in the MS shelf for SuperNode SE.

- RUL8 1) If LIU functionality is required on the ENI shelf, and ENET has been provided, provision:

one (1) NTZZ34GA DMS SNSE ENI F-Bus Common CP.

- 2) Provision any combination of:

NTZZ30TA CCS7 8 Meg LIU (DS0A),
NTZZ30UA CCS7 8 Meg LIU (E-DS0A),
NTZZ30VA CCS7 8 Meg LIU (E/HC-DS0A),
NTZZ30WA CCS7 8 Meg LIU (V.35)
as required.

A total of up to two (2) LIUs may be provisioned on the ENI shelf.

Note:

The ENI shelf cannot support LIUs without the provisioning of an ENET. The reason for this restriction is that the ENET processor circuit packs control the power lock-out for

the ENI shelf. If there are no ENET processor packs, there is no power supplied to the ENI shelf.

- RUL9 1) The minimum allowable ENET configuration is 4K, with 2K of the initial 4K channels assigned for messaging between the MS and the ENET.
ENET on SuperNode SE is only available in 4K, 8K, 12K and 16K configurations.

Bulkheads MUST ALWAYS be provided on the ENI shelf, even if fillers are the only packs shipped in the ENI shelf.

Bulkheads MUST ALWAYS be provided on the CM/SLM shelf.

The ENI bulkheads have different connectors for Standard, Meridian as well as Streamline applications. Therefore, different product codes are required for different applications.

The bulkhead NT9X6553 is the common CM/SLM bulkhead for Standard, Meridian and Streamline applications. It is always provided, except in the case when the NT9X6520/NT9X6521 bulkhead pair is ordered.

The NT9X6520/21 pair always requires the NT9X6552 CM/SLM bulkhead for 49 to 96 DS30 links.

The ENI and CM/SLM bulkheads are provisioned as follows:

Choose one of the four bulkhead options listed below:

For standard applications without an SLC, with up to 48 DS30 links provision:

one (1) NT9X6520 ENI Bulkhead Assembly (left),
one (1) NT9X6521 ENI Bulkhead Assembly (right),
and
two (2) NT9X6553 CM/SLM Bulkhead Assemblies.
The NT9X6553 CM/SLM bulkheads have no DS30 connection capability.

For standard applications without an SLC, with more than 48 DS30 links,
but less than or equal to 96 DS30 links

provision:

one (1) NT9X6520 ENI Bulkhead Assembly (left),
one (1) NT9X6521 ENI Bulkhead Assembly (right),
and

two (2) NT9X6552 CM/SLM Bulkhead Assemblies
for extra DS-30 connection capacity.

For standard applications with an SLC, and with
more than 48 DS30 links,
but less than or equal to 112 DS30 links

provision:

one (1) NT9X6530 ENI Bulkhead Assembly (left),
one (1) NT9X6531 ENI Bulkhead Assembly (right),
and
two (2) NT9X6553 CM/SLM Bulkhead Assemblies.

See Building Block NTZZ34FA - DMS SuperNode SE 4K ENET,
RUL1 for additional details.

- 2) For a 4K ENET, provision
one (1) NTZZ34FA DMS SNSE 4K ENET,
one (1) NTZZ34BA DMS SNSE ENI Common CP
and
see 6) below for cable provisioning requirements.

Provide front fillers (NT9X19AA) and paddleboard fillers
(NT9X19BA) for all unprovisioned slots. All slots must be
filled to ensure proper air flow for cooling.

- 3) For an 8K ENET, provision
one (1) NTZZ34FA DMS SNSE 4K ENET,
one (1) NTZZ34BA DMS SNSE ENI Common CP
and
four (4) NT9X35FA 8K Crosspoint Circuit Packs in slots 14F,
15F, 24F and 25F.
Also provision any combination of
NT9X40BA 4-Port DS512 Fiber Interface Paddleboards,
NT9X41BA 16-Port DS30 Paddleboards
and
NT9X45BA 3-Port DS512 + 16-Port DS30 Paddleboards in slots
14R, 15R, 24R and 25R,
provided that slots 14R and 24R have matching paddleboards
and slots 15R and 25R also have matching paddleboards.

Also, see 6) below for cable provisioning requirements.

Provide front fillers (NT9X19AA) and paddleboard fillers
(NT9X19BA) for all unprovisioned slots. All slots must be
filled to ensure proper air flow for cooling.

- 4) For a 12K ENET, provision

one (1) NTZZ34FA DMS SNSE 4K ENET,
one (1) NTZZ34BA DMS SNSE ENI Common CP,
and
eight (8) NT9X35FA 8K Crosspoint Circuit Packs in slots 14F
to 17F and 24F to 27F.

Also provision any combination of
NT9X40BA 4-Port DS512 Fiber Interface Paddleboards,
NT9X41BA 16-Port DS30 Paddleboards and
NT9X45BA 3-Port DS512 16-Port DS30 Paddleboards in slots
14R to 17R and 24R to 27R,
providing that matching paddleboards are used in each of
the following pairs of slots:
14R and 24R; 15R and 25R;
16R and 26R; 17R and 27R.
The total number of NT9X41BA and NT9X45BA Paddleboards may
not exceed four (4) per ENET plane for Meridian applica-
tions.

Also, see 6) below for cable provisioning requirements.

Provide front fillers (NT9X19AA) and paddleboard fillers
(NT9X19BA) for all unprovisioned slots. All slots must be
filled to ensure proper air flow for cooling.

- 5) For a 16K ENET, provision
one (1) NTZZ34FA DMS SNSE 4K ENET,
one (1) NTZZ34BA DMS SNSE ENI Common CP
and
twelve (12) NT9X35FA 8K Crosspoint Circuit Packs in slots
14F to 19F and 24F to 29F.
Also provision any combination of
NT9X40BA 4-Port DS512 Fiber Interface Paddleboards,
NT9X41BA 16-Port DS30 Paddleboards and
NT9X45BA 3-Port DS512 16-Port DS30 Paddleboards in slots
14R to 19R and 24R to 29R, provided that matching
paddleboards are used in each of the following pairs of
slots:
14R and 24R; 15R and 25R;
16R and 26R; 17R and 27R;
18R and 28R; 19R and 29R.
The total number of DS30 ports provided by the NT9X41BA and
NT9X45BA Paddleboards may not exceed ninety-six (96) per
ENET plane due to the limit of bulkhead cable connectors
available to terminate DS30 links.
The total number of NT9X41BA and NT9X45BA Paddleboards may
not exceed four (4) per ENET plane for Meridian applica-
tions.

The paddleboards in slots 19R and 29R may not be used for DS30 links.

Also, see 6) below for cable provisioning requirements.

Provide front fillers (NT9X19AA) and paddleboard fillers (NT9X19BA) for all unprovisioned slots. All slots must be filled to ensure proper air flow for cooling.

6) For Standard applications, provision:

one (1) NT9X0520 Cable Assembly per NT9X41BA and
one (1) NT9X0524 Cable Assembly per NT9X45BA

(if the NT9X41BA or NT9X45BA is in slot 17R or 18R and requires DS30 connections to the CM bulkhead in position 00, use NT9X0540 instead of NT9X0520 and NT9X0542 instead of NT9X0524).

The CM bulkhead is required when the DS-30 channel capacity exceeds 48 DS-30s per ENET plane, without an SLC. Forty-eight DS-30s is the maximum connection capacity of a single NT9X6520/21 ENI bulkhead. In the case where the 48 DS-30 limit is exceeded, a CM bulkhead needs to be provisioned as part of the NTZZ34FA building block.

for Meridian applications, provision:

one (1) NT9X0815 Cable Assembly per NT9X41BA and
one (1) NT9X0817 Cable Assembly per NT9X45BA.
for up to 64 DS-30s.

For Streamline applications, provision:

one (1) NT9X0546 Cable Assembly per NT9X41BA and
one (1) NT9X0547 Cable Assembly per NT9X45BA
(when an SLC is provided,
use NT9X0544 instead of NT9X0546 and
use NT9X0545 instead of NT9X0547).
Both of the above cabling scenarios for Streamline allow
the termination of up to 112 DS-30 links.

Note:

The NT9X40BA only has fiber ports and fiber cables do not terminate on the bulkhead. The cables from this paddleboard go through a hole in the bulkhead and connect directly to the fiberized peripheral.

- RUL10 1) The NT9X13MA is always provided in the NTZZ34AA Building Block and hence, the only memory CPs that are provisionable are the 24Meg NT9X14DBs.

The NT9X13MA only supports 24Mb memory.

Provision memory circuit packs in pairs, in slots in the following order:

- 1) 16F and 23F;
- 2) 15F and 24F;
- 3) 14F and 25F;
- 4) 13F and 26F;
- 5) 12F and 27F.

The number of pairs to be provisioned depends on the memory requirement for the office.

- RUL11 1) For the two (2) always provided NT9X23AA paddleboards in the NTZZ34AB Building Block, provide:

two (2) NT9X0434 DS30 Cable Assemblies for standard applications,
or
two (2) NT9X0474 DS30 Cable Assemblies for Meridian applications,
or
two (2) NT9X6544 DS30 Cable Assemblies for Streamline applications.

- 2) Bulkheads MUST ALWAYS be provided on the MS shelf.
Choose one of the three bulkhead options below.

- 3) For standard applications, provide:

two (2) NT9X0433 IML DS30 Cable Assemblies,
two (2) NT9X0475 IML DS30 Cable Assemblies,
one (1) NT9X6550 MS Bulkhead Assembly (left) and
one (1) NT9X6551 MS Bulkhead Assembly (right).

(For underfloor cabling use NT9X0433 instead of NT9X0475.)

- 3) For Meridian applications, provision

one (1) NT9X0478 IML IOC0 Cable Assembly,
one (1) NT9X0479 IML IOC1 Cable Assembly,
one (1) NT9X6561 MS Bulkhead Assembly (left) and
one (1) NT9X6560 MS Bulkhead Assembly (right).

4) For Streamline applications, provision

one (1) NT9X0480 IML IOC0 Cable Assembly,
one (1) NT9X0481 IML IOC1 Cable Assembly,
one (1) NT9X6567 MS Bulkhead Assembly (left) and
one (1) NT9X6568 MS Bulkhead Assembly (right).

RUL12 1) Provide designation labels as required.

RUL13 1) Provide mechanical hardware for the S/DMS cabinet, such as end guards, frame isolating pads and anchors by using the Engineering Manual inserts:

NT9X95AA - Mechanical Hardware for S/DMS Cabinet,
NTRX73 - Cabinetized DMS Cosmetic Endguards
and EMI Sidepanels.

2) Always provide one (1)

NTZZ30JA - Miscellaneous Hardware - Grey
and
two (2) NTRX07AB End Panel Assy Kits (Grey)
for grey cabinets.

Provide:

one (1) Cable Trough (Grey) (NT0X25AX)
for offices with a grey SNSE cabinet and overhead cabling.

3) Always provide one (1)

NTZZ30KA - Miscellaneous Hardware - Brown.
and
two (2) NTRX07AE End Panel Assy Kits (Brown)
for brown cabinets.

Provide:

one (1) Cable Trough (Brown) (NT0X24BH)
for offices with a brown SNSE cabinet and overhead cabling.

4) For offices with -48 volt power convertors, provide:

one (1) Cooling Unit (-48V) (NT9X95CU)
and
one (1) E-CORE Frame Supv Panel (NT9X03AA).

RUL14 1) Provide one (1) NT9X9532 stand-alone Cabling Interface Kit when powering the NT9X01MB cabinet in stand alone lineup.

Includes power cables, filters, and miscellaneous mounting hardware.

Twenty-two (22) white boots are included in the NT9X9532 stand-alone Cabling Interface Kit.

Note: The twenty-two white boots MUST NOT be installed on the manufacturing shop floor. The boots must be shipped separately (loose) and installed at the job site.

- 2) Provide one (1) NT9X9531 Horizontal Power Cabling Interface Kit when powering the NT9X01MB cabinet in a Streamline lineup. Includes power cables, terminal blocks, and miscellaneous mounting hardware.

Always provide:

two (2) EMI contact strips (P0714698)
when providing the NT9X9531 Horizontal Power Cabling Interface Kit.

DMS SUPERNODE SE

NTZZ34AB

| RATING: Manufacturing Discontinued (MD)

ABBREVIATION NAME: SCC

ENGINEERING DESCRIPTION: The SNSE houses a Computing Module (CM), a System Load Module (SLM1A), a Message Switch(MS), an Enhanced Network(ENET) and a Link Interface Shelf(LIS).

REFERENCE DOCUMENTATION: SL9X01MB 00 06
MS9X01MB 01 04
SLZZ34AB 00 02
NTZZ34AB REL 02

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA
Carrier
Wireless

ISSUE AUTHOR NTC: Ganesh Ram Dept. S646 (BRW)

MAIN CONTACT NTC: Ganesh Ram Dept. S646 (BRW)

NTZZ34AB EMC4-06-002 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 09 29	ECM 632 02	First Issue of insert
92 11 02	ECM 632 03	Fix misc errors and ommissions. ET15119: Add note stating that the 22 isolation boots are to be shipped to site, not installed in the mfg shop. ECD Replace -48V cooling unit 18-39706 'A' code with NT9X95CU pec code, C42 clean-up ECD.
93 01 15	ECM 632 04	Major Modifications to the Section
93 03 22	ECM 632 05	This BB is MD'd in iss. 05 of this ECM

The DMS SuperNode SE is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
DMS SuperNode SE Core Cabnt	NT9X01MB		1			AP
Message Switch Shelf Assy	NT9X0470		1	39		AP-01
-5V Power Converter	NT9X31AA		2	39	01F, 33F	AP
+5V Power Converter	NT9X30AA		2	39	04F, 36F	AP
T-Bus Terminator CP	NT9X49CC		2	39	07F, 32F	AP
Mapper CP	NT9X15AA		2	39	09F, 30F	AP
4-Port MS I/F CP	NT9X17AD		4	39	10F, 16F, 23F, 29F	AP
MS Processor CP	NT9X13NA		2	39	17F, 22F	AP
Combined Clock CP	NT9X53AC		2	39	18F, 21F	AP
T-Bus Access CP	NT9X52AA		2	39	19F, 20F	AP
4-Link DS30 PB	NT9X23AA		2	39	10R, 29R	AP
DMS SNSE MS LIS/ENI I/F	NTZZ34CA		1	39		RUL1
F-BUS Cab Assy 3-shelf (LE)	NT9X7210		2	39		RUL1
F-BUS Cab Assy 3-shelf (RI)	NT9X7212		2	39		RUL1
F-BUS Cab Assy 3-shelf (LE)	NT9X7211		2	39		RUL1
F-BUS Cab Assy 3-shelf (RI)	NT9X7213		2	39		RUL1
DMS SNSE MS 8xDS30 I/F	NTZZ34JA		1	39		RUL2
DMS SNSE MS 32xDS30 I/F	NTZZ34DA		1	39		RUL2
DS30 Cable Assembly (For Standard application)	NT9X0434		2	39		RUL2
DS30 IML DS30 Cable Ass. (Overhead appl.)	NT9X0475		2	39		RUL2
DS30 IML DS30 Cable Ass. (Raised Floor appl.)	NT9X0433		2	39		RUL2
MS Bulkhead Assembly (left)	NT9X6550		1	39		RUL2
MS Bulkhead Assembly (right)	NT9X6551		1	39		RUL2
IML IOC0 Cable Assembly (Meridian appication)	NT9X0478		1	39		RUL2
IML IOC1 Cable Assembly (Meridian appication)	NT9X0479		1	39		RUL2
MS Bulkhead Assembly (left) (Meridian appication)	NT9X6560		1	39		RUL2
MS Bulkhead Assembly (right) (Meridian appication)	NT9X6561		1	39		RUL2
IML IOC0 Cable Assembly (Streamline Application)	NT9X0480		1	39		RUL2
IML IOC1 Cable Assembly (Streamline Application)	NT9X0481		1	39		RUL2
Streamline Bulkhead (left)	NT9X6567		1	39		RUL2
Streamline Bulkhead (right)	NT9X6568		1	39		RUL2
DS30 Cable Assembly (with 23AA for Mer.appl.)	NT9X0474		2	39		RUL2
DS30 Cable Assembly	NT9X6544		2	39		RUL2

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
(with 23AA for Str. appl.) DS30 Cable Assembly	NT9X0520			39		RUL2
(with 69BA for stan.appl.) DS30 Cable Assembly	NT9X0477			39		RUL2
(with 69BA for Mer.appl.) DS30 Cable Assembly	NT9X0483			39		RUL2
(with 69BA for Str.appl.) 4-Port MS I/F CP	NT9X17AD			39	13F-15F, 24F-26F	RUL2
4-Link DS30 PB	NT9X23AA		4	39	13R-15R, 24R-26R	RUL2
32-Port MS I/F CP	NT9X17BB			39	13F-15F, 24F-26F	RUL3
64-Port MS I/F CP	NT9X17DA			39	13F-15F, 24F-26F	RUL3
2-Link SR512 PB	NT9X62CA			39	15R, 24R	RUL3
MS Port Expander PB	NT9X25BA			39	14R, 25R	RUL3
2-Link SR512 PB	NT9X62CA		2	39	16R, 23R	AP
RTIF PB	NT9X26AB		2	39	17R, 22R	AP
Clock Interface PB	NT9X54AC		2	39	18R, 21R	AP
MS Clock Cable Assembly	NT9X0436		1	39		AP
MS Clock Cable Assembly	NT9X0437		1	39		AP
Cable Assembly	NT9X0438		4	39		AP
MS0-MS1 Cable Assembly	NTEX5026		1	39		AP
Filler Face Plate	NT9X19AA			39		RUL4
PB Filler Face Plate	NT9X19BA			39		RUL4
Shelf Strip, MS (rear, bot)	P0739090		1	39		AP-01
Shelf Strip, MS (rear, top)	P0739091		1	39		AP-01
Design Strip, MS (front)	P0739092		1	39		AP-01
Design Label (NT9X17BB)	P0726962			39	13F-15F, 24F-26F	RUL12
Design Label (NT9X17DA)	P0707891			39	13F-15F, 24F-26F	RUL12
Design Label (NT9X62CA)	P0735105		2	39	13R-15R, 24R-26R	RUL12
Design Label (NT9X17AD)	P0735096			39	13F-15F, 24F-26F	RUL12
Design Label (NT9X23AA)	P0678443			39	13R-15R, 24R-26R	RUL12
Design Label (NT9X25BA)	P0697531			39	14R, 25R	RUL12

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Link Interface Shelf Assy	NT9X7204		1	26		AP
DMS SNSE LIS Common CP	NTZZ34EA		1	26	01F	RUL5
Filler Packfill	NT9X01FB		1	26		RUL5
Bulkhead Assembly	NT9X6534		2	26		RUL5
Cover Plate	NTEX5025		32	26		RUL5
F-Bus Extender PB	NT9X79AA		2	26	07R, 32R	RUL5
Design Label (NT9X79AA)	P0689621		2	26	07F, 32F	RUL5
F-Bus Ext with Term. PB	NT9X79BA		2	26	07R, 32R	RUL5
Design Label (NT9X79BA)	P0689622		2	26	07F, 32F	RUL5
CCS7 8 Meg LIU (DS0A)	NTZZ30TA			26	08F, 10F, 12F, 14F, 16F, 18F, 20F, 22F, 24F, 26F, 28F, 30F	RUL6
CCS7 8 Meg LIU (E-DS0A)	NTZZ30UA			26	08F, 10F, 12F, 14F, 16F, 18F, 20F, 22F, 24F, 26F, 28F, 30F	RUL6
CCS7 8 Meg LIU (E/HC-DS0A)	NTZZ30VA			26	08F, 10F, 12F, 14F, 16F, 18F, 20F, 22F, 24F, 26F, 28F, 30F	RUL6
CCS7 8 Meg LIU (V.35)	NTZZ30WA			26	08F, 10F, 12F, 14F, 16F, 18F, 20F, 22F, 24F, 26F, 28F, 30F	RUL6
Filler Face Plate	NT9X19AA		26	26	07F-32F	RUL6
PB Filler Face Plate	NT9X19BA		26	26	07R-32R	RUL6

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
ENI Shelf Assembly	NT9X0810		1	13		AP
Filler Packfill	NT9X01FB		1	13		RUL7
Bulkhead Assembly (left)	NT9X6520		1	13		RUL7,9
Bulkhead Assembly (right)	NT9X6521		1	13		RUL7,9
Bulkhead Assembly (left)	NT9X6530		1	13		RUL7,9
Bulkhead Assembly (right)	NT9X6531		1	13		RUL7,9
Bulkhead Assembly	NT9X0813		2	13		RUL7,9
Streamline Bulkhead Assembly	NT9X8909		2	13		RUL7,9
Bulkhead Assembly	NT9X0813		2	13		RUL7
Streamline Bulkhead Assembly	NT9X8909		2	13		RUL7
DMS SNSE ENI F-Bus Common CP	NTZZ34GA		1	13		RUL8
CCS7 8 Meg LIU (DS0A)	NTZZ30TA			13	08F,30F,	RUL8
CCS7 8 Meg LIU (E-DS0A)	NTZZ30UA			13	08F,30F,	RUL8
CCS7 8 Meg LIU (E/HC-DS0A)	NTZZ30VA			13	08F,30F,	RUL8
CCS7 8 Meg LIU (V.35)	NTZZ30WA			13	08F,30F,	RUL8
DMS SNSE ENI Common CP	NTZZ34BA		1	13		RUL9
DMS SNSE 4K ENET	NTZZ34FA		1	13		RUL9
8K Crosspoint CP	NT9X35FA			13	14F-19F, 24F-29F	RUL9
4-Port DS512 Fiber I/F PB	NT9X40BB			13	14R-19R, 24R-29R	RUL9
16-Port DS30 PB	NT9X41BA			13	14R-19R, 24R-29R	RUL9
3-Port DS512 16-Port DS30 PB	NT9X45BA			13	14R-19R, 24R-29R	RUL9
Cable Assembly	NT9X0520			13		RUL9
Cable Assembly	NT9X0524			13		RUL9
Cable Assembly	NT9X0540			13		RUL9
Cable Assembly	NT9X0542			13		RUL9
Cable Assembly (Meridian)	NT9X0815			13		RUL9
Cable Assembly (Meridian)	NT9X0817			13		RUL9
Cable Assy (Streamline, XPM)	NT9X0546			13		RUL9
Cable Assy (Streamline, SLC)	NT9X0544			13		RUL9
Cable Assy (Streamline, XPM)	NT9X0547			13		RUL9
Cable Assy (Streamline, SLC)	NT9X0545			13		RUL9
Design Label (NT9X35FA)	P0735098			13	14F-19F, 24F-29F	RUL12
Design Label (NT9X40BB)	P0734155			13	14R-19R, 24R-29R	RUL12
Design Label (NT9X41BA)	P0704528			13	14R-19R, 24R-29R	RUL12
Design Label (NT9X45BA)	P0731527			13	14R-19R, 24R-29R	RUL12
Shelf Strip, ENI (front)	P0739099		1	13		AP-03
Shelf Strip, ENI (rear, bot)	P0739100		1	13		AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Shelf Strip, ENI (rear, top)	P0739101		1	13		AP
Design Strip, ENI (front)	P0739102		1	13		AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Cmp Mod Sys Load Mod Sh Assy	NT9X0610		1	00		AP-01
+5V/+12V Power Conv	NT9X91AA		2	00	01F, 36F	AP
+5V/-5V Power Conv	NTDX15AA		2	00	04F, 33F	AP
System Load Module 1A	NT9X44AC		2	00	07F, 28F	AP
CPU Port CP	NT9X12AC		2	00	17F, 22F	AP
Dual Port Msg Controller CP	NT9X86AA		2	00	18F, 21F	AP
CM Processor CP	NT9X13MA		2	00	19F, 20F	RUL10
Des. Labels(NT9X13MA)	P0727357		2	00	19F, 20F	RUL12
Parallel Port Interface PB	NT9X46AA		4	00	07R, 17R	AP
					22R, 28R	
P-Bus Terminator PB	NT9X21AB		2	00	12R, 27R	AP
2-Link SR512 PB	NT9X62AA		2	00	18R, 21R	AP
RTIF PB	NT9X26AB		2	00	19R, 20R	AP
CM Extension Cable Assembly	NT9X0167		2	00		AP
E/W 2-25 Pin Cable Assembly	NT9X0160		2	00		AP
RS-232C/Curr Loop Cable Assy	NT9X0196		2	00		AP
Cable Assembly	A0379486		8	00		AP
ENET-CM/SLM Bulkhead Assy	NT9X6552		2	00		RUL7,9
CM/SLM Bulkhead Assy	NT9X6553		2	00		RUL7,9
24 Meg Memory CP	NT9X14DB			00	12F-16F, 23F-27F	RUL10
Design Label (NT9X14DB)	P0700802			00	12F-16F, 23F-27F	RUL12
Filler Face Plate	NT9X19AA			00		RUL4
PB Filler Face Plate	NT9X19BA			00		RUL4
ENET/W-CM Bulkhead Assembly	NT9X6552		2	00		RUL7,9
CM/SLM Bulkhead Assembly	NT9X6553		2	00		RUL7,9
CM/SLM Shelf (rear strip)	P0735782		1	00		AP-01
Shelf Strip, CM/SLM (rear,b)	P0739105		1	00		AP-01
Shelf Strip, CM/SLM (rear,t)	P0739106		1	00		AP-01
Design Strip, CM/SLM (front)	P0739107		1	00		AP-01
Cabinet Mechanical Hardware						RUL13
Misc Hardware - Grey	NTZZ30JA		1			RUL13
Misc Hardware - Brown	NTZZ30KA		1			RUL13
Cable Trough (Brown)	NT0X24BH		1			RUL13
End Panel Assy Kit (Brown)	NTRX07AE		2			RUL13
Cable Trough (Grey)	NT0X25AX		1			RUL13
End Panel Assy Kit (Grey)	NTRX07AB		2			RUL13
E-CORE Frame Supv Panel	NT9X03AA		1	52		RUL13
Cooling Unit (-48V)	NT9X95CU		1			RUL13
Stand-alone Power Cab. kit	NT9X9532		1			RUL14

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Horizontal Power Cab.kit	NT9X9531		1			RUL14
EMI Contact Strips	P0714698		2			RUL14

FLAGS:

NOTES:

RULES:

- AP 1) When PEC NTZZ34AB is ordered, these items are provided.
- AP-01 1) These items are provided with NT9X01MB and are listed here for reference.
- AP-02 1) These items are provided with NT9X7204 and are listed here for reference.
- AP-03 1) These items are provided with NT9X0810 and are listed here for reference.

- RUL1
- 1) If ASUs are provisioned on either the LIS or ENI shelf, provide one (1) NTZZ34CA DMS SuperNode SE MS LIS/ENI Interface.
 - 2) To connect the F-BUS from the MS to the LIS shelf only, provide two (2) NT9X7211 F-BUS Cables (LE) and two (2) NT9X7213 F-BUS Cables (RI).
 - 3) To connect the F-BUS from the MS to the LIS and ENI shelf, provide two (2) NT9X7210 F-BUS Cables (LE) and two (2) NT9X7212 F-BUS Cables (RI).
 - 4) If there are no ASUs in the LIS or ENI shelf, there is no need to extend the F-Bus from the MS down to the LIS or ENI shelves, in which case, do not order NTZZ34CA Building Block.

RUL2 1) MS DS-30 Ports

A minimum of four (4) DS-30 ports are provided in NTZZ34AB slot 10 (MS 0) and slot 29 (MS 1) for mandatory IOC and IML ports. This minimal requirement is met when the NTZZ34AB Building Block containing:
two (2) NT9X17AD in slots 10F, 29F and
two (2) NT9X23AA in slots 10R, 29R
is ordered.

Bulkheads MUST ALWAYS be job engineered on the MS shelf.

To support the 2 IML and 2 IOC links for the two (2) always provided NT9X23AA paddleboards in the NTZZ34AB Building Block Provide:

A) For Standard application,

- two (2) NT9X0434 DS30 Cable Assemblies
- two (2) NT9X0475 IML DS30 Cable Assemblies (for overhead)

OR

- two (2) NT9X0433 IML DS30 Cable Assemblies (for raised floor)
- one (1) NT9X6550 MS Bulkhead Assembly (left) and
- one (1) NT9X6551 MS Bulkhead Assembly (right)

B) For Meridian applications,

- one (1) NT9X0478 IML IOC0 Cable Assembly (right)
- one (1) NT9X0479 IML IOC1 Cable Assemblies (left)
- one (1) NT9X6560 MS Bulkhead Assembly (left) and
- one (1) NT9X6561 MS Bulkhead Assembly (right)

C) For Streamline application

- one (1) NT9X0480 IML IOC0 Cable Assembly(right)
- one (1) NT9X0481 IML IOC1 Cable Assemblies(left)
- one (1) NT9X6567 MS Bulkhead Assembly (left) and
- one (1) NT9X6568 MS Bulkhead Assembly (right)

2) For four (4) additional DS-30 ports for IOC provide:

- two (2) NT9X17AD slots in 11F, 28F and
- two (2) NT9X23AA slots in 11R, 28R

3) Additional DS-30 ports can be provided for up to three (3) LPPs and two (2) IMLs by using two (2) NT9X17BB circuit packs with two (2) NT9X69BA paddleboards, in available unequipped slots 11 for plane 0 and 28 for plane 1.

Note: LPP/IML is the only allowed port mixture for LPPs. LPPs cannot occupy ports on the same card as JNETs due to hardware contention problems. LPPs and JNETs do not function when they are assigned to ports on the same MS card.

Order the appropriate cables for the DS30 paddleboards with respect to standard, Meridian and Streamline bulkheads.

For each provisionable NT9X23AA DS30 paddleboard provide:

one (1) NT9X0434 DS30 Cable Assembly for standard applications,

OR

one (1) NT9X0474 DS30 Cable Assembly for Meridian applications,

OR

one (1) NT9X6544 DS30 Cable Assembly for Streamline applications.

For each provisionable NT9X69BA DS30 paddleboard provide:

one (1) NT9X0520 DS30 Cable Assembly for standard applications,

OR

one (1) NT9X0477 DS30 Cable Assembly for Meridian applications,

OR

one (1) NT9X0483 DS30 Cable Assembly for Streamline applications.

5) To support up to four (4) JNET network modules, provision one (1) NTZZ34JA DMS SuperNode SE MS 8xDS30 Interface.

- 6) The maximum number of JNET network modules that may be provisioned is seven (7) for LEC/IEC markets, except for MSL applications where the limit is ten (10).
- 7) To support up to ten (10) JNET network modules and up to six (6) IOCs, provision one (1) NTZZ34DA DMS SuperNode SE MS 32xDS30 Interface.
- 8) The provisioning of two NT9X17AD/NT9X23AA pair combinations (four circuit packs) adds capacity for two (2) JNET modules, or one (1) JNET module and two (2) IOCs. Since the NT9X17AD/NT9X23AA circuit pack combination supports both JNET and IOCs, the two can be mixed to optimize MS port utilization when engineering an office. These are the same rules applicable to the regular SuperNode, bearing in mind the engineering capacities dictated in these engineering rules for LEC, IEC and MSL markets.

- RUL3 1) To allow the SNSE to support ENET with both LPPs and AP/FPs without slot contention, is recommended that MS slots are allocated as follows:

Slots 10, 11, 28, 29 for DS-30 interfaces to IOC, IML and LPPs.

Slots 12, 13, 26, 27 for SubRate interfaces to FLIS, AP and FPs.

Slots 14, 15, 24, 25 for ENET.

- 2) Use the following table to provide the circuit packs necessary for the required maximum number of MS and ENET ports.

P-side ports/ MS Plane	P-Side Peripheral Msg ports/ ENET plane	slot 15 & 24		slot 14 & 25	
		Front Front	Rear Rear	Front Front	Rear Rear
32	15	17BB	62CA	-	-
64	31	17DA	62CA	-	-
128	63	17DA *17CA	62CA 62CA	17DA -	25BA -
256	127	*17CA	62CA	*17CA	25BA

* The NT9X17CA is a 128 port card that is available in BCS35 for Verification Offices(VOs). The circuit pack will attain General Availability(GA) in BCS36.

The circuit pack fill order is:

- 1) 15F/R (MS 0) and 24F/R (MS 1),
 - 2) 14F/R (MS 0) and 25F/R (MS 1).
- 3) To support ENET and up to 15 peripheral message ports per ENET plane, provision two (2) NT9X17BB 32-Port MS Interface Circuit Packs in slot positions 15F for Plane 0 and 24F for Plane 1, and two (2) NT9X62CA 2-Link SR512 Paddleboards in slot positions 15R and 24R.
- 4) To support ENET and up to 31 peripheral message ports per ENET plane, provision two (2) NT9X17DA 64-Port MS Interface Circuit Packs in slot positions 15F and 24F, and two (2)

NT9X62CA 2-Link SR512 Paddleboards in slot positions 15R and 24R.

- 5) To provide 16 or 32 peripheral message ports per ENET plane in addition to the ports provided in 3) or 4) above, provision two (2) NT9X17BB 32-Port MS Interface Circuit Packs (for 16 additional ports)

OR

two (2) NT9X17DA 64-Port MS Interface Circuit Packs (for 32 additional ports) in slot positions 14F and 25F, and two (2) NT9X25BA MS Port Expander Paddleboards in slot positions 14R and 25R. Note that the NT9X25BA should always be provided as the last paddleboard in an MS port card chain.

Also note that, mixed 17BB & 17DA configurations are not supported until BCS35.

6) SR512 Ports

To add FLIS provide, two (2) NT9X17AD and two (2) NT9X62BA. To add AP/FP provide, two (2) NT9X17DA and two (2) NT9X62BA.

Provision these cards in available slots 15 to 11 and 24 to 28.

- RUL4 1) Provision NT9X19AA Filler Face Plates and NT9X19BA Paddleboard Filler Face Plates for all unoccupied slots.

- RUL5 1) Provide one (1) NTZZ34EA DMS SNSE LIS Common CP in shelf position 26 if LIUs are to be provisioned.

If LIUs are equipped on the LIS and ENI shelves, provide:
two (2) NT9X79AA F-Bus Extender Paddleboards and,
two (2) NT9X79AA Des. Labels (P0689621).
These items extend the F-Bus on to the ENI shelf.

If LIUs are equipped on the LIS shelf only, provide:
two (2) NT9X79BA F-Bus Extender with BUS Termination PBs
two (2) NT9X79BA Des. Labels (P0689622).
The NT9X79BA terminate the F-Bus on the LIS shelf.

Provision one (1) NTEX5025 Cover Plate for each unused cable position on the NT9X6534 Bulkhead Assemblies. There are a total of 96 DS-30 cable connector positions on the bulkheads, 48 on each side.

- 2) If LIU functionality is not required on the LIS shelf, provide one (1) NT9X01FB Filler Packfill, two (2) NT9X6534 LIS Bulkhead Assemblies, and thirty-two (32) NTEX5025 Cover Plates.

Bulkheads MUST ALWAYS be ordered on the LIS shelf, even if fillers are the only packs shipped with the SuperNode SE cabinet.

The NT9X01FB filler packfill contains:

- four (4) NT9X19CA Power Filler Face Plates,
- two (2) NT9X0314 FSP Shorting Plugs (B0225296),
- twenty-six (26) NT9X19AA Filler Face Plates and
- twenty-six (26) NT9X19BA Paddleboard Filler Face Plates,

RUL6 1) Provision any combination of:

NTZZ30TA CCS7 8 Meg LIU (DS0A)
NTZZ30UA CCS7 8 Meg LIU (E-DS0A)
NTZZ30VA CCS7 8 Meg LIU (E/HC-DS0A)
NTZZ30WA CCS7 8 Meg LIU (V.35)

A total of up to twelve (12) LIUs may be provisioned on the LIS.

2) Provide NT9X19AA Front Filler circuit packs and NT9X19BA Rear Filler paddleboards for all unequipped slots in the LIS shelf.

- RUL7 1) If ENET or LIU functionality is not required in the ENI shelf, and the cabinet is to be shipped with an empty ENI Shelf Assembly, provide one (1) NT9X01FB Filler Packfill, two (2) ENI bulkheads, and two (2) CM/SLM bulkheads.

Bulkheads MUST ALWAYS be provided on the ENI shelf, even if fillers are the only packs shipped in the ENI shelf.

Bulkheads MUST ALWAYS be provided on the CM/SLM shelf.

The NT9X01FB filler packfill contains:

- four (4) NT9X19CA Power Filler Face Plates,
- two (2) NT9X0314 FSP Shorting Plugs (B0225296),
- twenty-six (26) NT9X19AA Filler Face Plates and
- twenty-six (26) NT9X19BA Paddleboard Filler Face Plates,

- 2) The ENI and CM/SLM bulkheads are provisioned as follows:
For standard applications provision:

- one (1) NT9X6520 Bulkhead Assembly (left),
- one (1) NT9X6521 Bulkhead Assembly (right), and
- two (2) NT9X6553 CM/SLM Bulkhead Assemblies.

- 3) For Meridian applications, provision:

- two (2) NT9X0813 Bulkhead Assemblies and
- two (2) NT9X6553 CM/SLM Bulkhead Assemblies.

- 4) For Streamline applications, provision:

two (2) NT9X8909 Streamline Bulkhead Assemblies and
two (2) NT9X6553 CM/SLM Bulkhead Assemblies.

- RUL8 1) If LIU functionality is required on the ENI shelf, and ENET has been provided, provision one (1) NTZZ34GA DMS SNSE ENI F-Bus Common CP.

- 2) Provision any combination of:

NTZZ30TA CCS7 8 Meg LIU (DS0A),
NTZZ30UA CCS7 8 Meg LIU (E-DS0A),
NTZZ30VA CCS7 8 Meg LIU (E/HC-DS0A),
NTZZ30WA CCS7 8 Meg LIU (V.35)
as required.

Note:

A total of up to two (2) LIUs may be provisioned on the ENI shelf.

The ENI shelf cannot support LIUs without the provisioning of an ENET. The reason for this restriction is that the ENET processor circuit packs control the power lock-out for

the ENI shelf. If there are no ENET processor packs, there is no power supplied to the ENI shelf.

- RUL9 1) The minimum allowable ENET configuration is 4K, with 2K of the initial 4K channels assigned for messaging between the MS and the ENET. The ENET on SuperNode SE is only available in 4K, 8K, 12K and 16K configurations.

- 2) For a 4K ENET, provision one (1) NTZZ34FA DMS SNSE 4K ENET, one (1) NTZZ34BA DMS SNSE ENI Common CP and see item 6) below for cable provisioning requirements.

Provide front fillers (NT9X19AA) and paddleboard fillers (NT9X19BA) for all unprovisioned slots. All slots must be filled to ensure proper air flow for cooling.

- 3) For an 8K ENET, provision one (1) NTZZ34FA DMS SNSE 4K ENET, one (1) NTZZ34BA DMS SNSE ENI Common CP and four (4) NT9X35FA 8K Crosspoint Circuit Packs in slots 14F, 15F for Plane 0, and 24F and 25F for Plane 1.

Also provision any combination of NT9X40BB 4-Port DS512 Fiber Interface Paddleboards, NT9X41BA 16-Port DS30 Paddleboards and NT9X45BA 3-Port DS512 + 16-Port DS30 Paddleboards in slots 14R, 15R, 24R and 25R, provided that slots 14R and 24R have matching paddleboards and slots 15R and 25R also have matching paddleboards.

Also, see 6) below for cable provisioning requirements. Provide front fillers (NT9X19AA) and paddleboard fillers (NT9X19BA) for all unprovisioned slots. All slots must be filled to ensure proper air flow for cooling.

- 4) For a 12K ENET, provision one (1) NTZZ34FA DMS SNSE 4K ENET, one (1) NTZZ34BA DMS SNSE ENI Common CP, and eight (8) NT9X35FA 8K Crosspoint Circuit Packs in slots 14F to 17F for Plane 0 and 24F to 27F for Plane 1.

Also provision any combination of NT9X40BB 4 Port DS512 Fiber Interface Paddleboards, NT9X41BA 16-Port DS30 Paddleboards and NT9X45BA 3-Port DS512 16-Port DS30 Paddleboards in slots 14R to 17R and 24R to 27R, providing that matching paddleboards are used in each of the following pairs of slots:

14R and 24R; 15R and 25R;
16R and 26R; 17R and 27R.

The total number of NT9X41BA and NT9X45BA Paddleboards may not exceed four (4) per ENET plane for Meridian applications.

Also, see 6) below for cable provisioning requirements.

Provide front fillers (NT9X19AA) and paddleboard fillers (NT9X19BA) for all unprovisioned slots. All slots must be filled to ensure proper air flow for cooling.

- 5) For a 16K ENET, provision one (1) NTZZ34FA DMS SNSE 4K ENET, one (1) NTZZ34BA DMS SNSE ENI Common CP and twelve (12) NT9X35FA 8K Crosspoint Circuit Packs in slots 14F to 19F and 24F to 29F.

Also provision any combination of NT9X40BB 4-Port DS512 Fiber Interface Paddleboards, NT9X41BA 16-Port DS30 Paddleboards and NT9X45BA 3-Port DS512 16-Port DS30 Paddleboards in slots 14R to 19R and 24R to 29R, provided that matching paddleboards are used in each of the following pair of slots:

14R and 24R; 15R and 25R;
16R and 26R; 17R and 27R;
18R and 28R; 19R and 29R.

The total number of DS30 ports provided by the NT9X41BA and NT9X45BA Paddleboards may not exceed ninety-six (96) per ENET plane due to the limit of bulkhead cable connectors available to terminate DS30 links.

The total number of NT9X41BA and NT9X45BA Paddleboards may not exceed four (4) per ENET plane for Meridian applications.

The paddleboards in slots 19R and 29R may not be used for DS30 links.

Also, see 6) below for cable provisioning requirements.

Provide front fillers (NT9X19AA) and paddleboard fillers (NT9X19BA) for all unprovisioned slots. All slots must be filled to ensure proper air flow for cooling.

- 6) For Standard applications, provision:

one (1) NT9X0520 Cable Assembly per NT9X41BA and
one (1) NT9X0524 Cable Assembly per NT9X45BA
(if the NT9X41BA or NT9X45BA is in slot 17R or 18R and requires DS30 connections to the CM bulkhead in position 00, use NT9X0540 instead of NT9X0520 and NT9X0542 instead of NT9X0524).

for Meridian applications, provision:

one (1) NT9X0815 Cable Assembly per NT9X41BA and
one (1) NT9X0817 Cable Assembly per NT9X45BA.

for up to 64 DS-30s.

For Streamline applications, provision:

one (1) NT9X0546 Cable Assembly per NT9X41BA and

one (1) NT9X0547 Cable Assembly per NT9X45BA

(when an SLC is provided, use NT9X0544 instead of NT9X0546 and use NT9X0545 instead of NT9X0547).

Both of the above cabling scenarios for Streamline allow the termination of up to 112 DS-30 links.

Note:

The NT9X40BB only has fiber ports and fiber cables do not terminate on the bulkhead. The cables from this paddleboard go through a hole in the bulkhead and connect directly to the fiberized peripheral.

7) BULKHEAD PROVISIONING

The ENI bulkheads have different connectors for Standard, Meridian as well as Streamline applications. The bulkhead NT9X6553 is the common CM/SLM bulkhead for Standard, Meridian and Streamline applications.

The NT9X6520/21 pair always requires the NT9X6553 CM/SLM bulkhead for 1 to 48 DS30 links. The NT9X6520/21 pair always requires the NT9X6552 CM/SLM bulkhead for 49 to 96 DS30 links.

The ENI and CM/SLM bulkheads are provisioned as follows:
Choose one of the bulkhead options listed below:

For standard applications without an SLC, with up to 48 DS30 links provision:

one (1) NT9X6520 ENI Bulkhead Assembly (left),

one (1) NT9X6521 ENI Bulkhead Assembly (right) and

two (2) NT9X6553 CM/SLM Bulkhead Assemblies.

The NT9X6553 CM/SLM bulkheads have no DS30 connection capability.

For standard applications without an SLC, with more than 48 DS30 links, but less than or equal to 96 DS30 links provision:

one (1) NT9X6520 ENI Bulkhead Assembly (left),

one (1) NT9X6521 ENI Bulkhead Assembly (right) and

two (2) NT9X6552 CM/SLM Bulkhead Assemblies

The NT9X6552 CM/SLM bulkheads have extra DS-30 connection capacity.

For standard applications with an SLC, and with more than 48 DS30 links, but less than or equal to 112 DS30 links provision:

one (1) NT9X6530 ENI Bulkhead Assembly (left),
one (1) NT9X6531 ENI Bulkhead Assembly (right) and
two (2) NT9X6553 CM/SLM Bulkhead Assemblies.

The CM bulkhead is required when the DS-30 channel capacity exceeds 48 DS-30s per ENET plane, without an SLC. Forty-eight DS-30s is the maximum connection capacity of a single NT9X6520/21 ENI bulkhead.

RUL10 1) Provide two NT9X13MA processors to support the CM section of the SuperNode SE. The NT9X13MA supports 24Mb memory only.

- 2) For new jobs at BCS35 and higher, provide the NT9X13MB processor circuit boards. The NT9X13MB Processor provides ability to function with either NT9X14EA (96 Meg memory) or NT9X14DB (24 Meg memory), but not both. That is NT9X14DB and NT9X14EA WILL NOT be supported in a mixed configuration. Check availability prior to ordering NT9X14EA.

The NT9X14EA memory boards have the capability to function in burst mode. Burst mode memory is required to fully utilize the Series 60 BRISC processor (BRISC not available until BCS36). The new RTIF NT9X26DB will have to be provisioned with this BRISC processor. 3) The NT9X14DB 24Mb circuit boards are to be provided for memory extensions of existing offices at BCS34. Note that 24Mb circuit boards do not function in burst mode.

- 4) Provision memory circuit packs in pairs, in slots in the following order:

- 1) 16F and 23F;
- 2) 15F and 24F;
- 3) 14F and 25F;
- 4) 13F and 26F;
- 5) 12F and 27F.

The number of pairs to be provisioned depends on the memory requirement for the office.

RUL11 Deleted

RUL12 1) Provide designation labels as required.

RUL13 1) Provide mechanical hardware for the S/DMS cabinet, such as end guards, frame isolating pads and anchors by using the Engineering Manual inserts:

NT9X95AA - Mechanical Hardware for S/DMS Cabinet,
NTRX73 - Cabinetized DMS Cosmetic Endguards
and EMI Sidepanels.

- 2) Provision one (1) NTZZ30JA - Miscellaneous Hardware - Grey and two (2) NTRX07AB End Panel Assy Kits (Grey) for grey cabinets.

Provide one (1) Cable Trough (Grey) (NT0X25AX) for offices with a grey SNSE cabinet and overhead cabling.

OR

- 3) Provision one (1) NTZZ30KA - Miscellaneous Hardware - Brown. and two (2) NTRX07AE End Panel Assy Kits (Brown) for brown cabinets.

Provide one (1) Cable Trough (Brown) (NT0X24BH) for offices with a brown SNSE cabinet and overhead cabling.

- 4) For offices with -48 volt power convertors, provide one (1) Cooling Unit (-48V) (NT9X95CU) and one (1) E-CORE Frame Supv Panel (NT9X03AA).

- RUL14 1) Provide one (1) NT9X9532 stand-alone Cabling Interface Kit when powering the NT9X01MB cabinet in stand alone lineup. Includes power cables, filters, and miscellaneous mounting hardware.
Twenty-two (22) white boots are included in the NT9X9532 stand-alone Cabling Interface Kit.

Note: The twenty-two white boots MUST NOT be installed on the manufacturing shop floor. The boots must be shipped separately (loose) and installed at the job site.

- 2) Provide one (1) NT9X9531 Horizontal Power Cabling Interface Kit when powering the NT9X01MB cabinet in a Streamline lineup. Includes power cables, terminal blocks, and miscellaneous mounting hardware.

Always provide:

two (2) EMI contact strips (P0714698)
when providing the NT9X9531 Horizontal Power Cabling Interface Kit.

DMS SUPERNODE SE COMBINED CABINET: (-60V)

PEC CODE: NTZZ34MA

CPC CODE: B0237614

| RATING: Manufacturing Discontinued (MD)

REPLACES: Not Applicable

REPLACED BY: NTZZ34MB

ABBREVIATION NAME: SCC

ENGINEERING DESCRIPTION: The DMS SuperNode SE Combined Cabinet: (-60V) houses a Computing Module (CM), a System Load Module 1A (SLM1A), a Message Switch (MS), an Enhanced Network (ENET) and a Link Interface Shelf (LIS).

The NTZZ34MA Building Block is for applications for markets that utilize -60V power.

REFERENCE DOCUMENTATION: SL9X01MB 00 07
MS9X01MB 01 07
SLZZ34MA 00 01
NTZZ34MA REL 01

MARKETS: Applicable markets:

Europe

ISSUE AUTHOR: NTC: Ganesh Ram Dept. S646 (BRW)

MAIN CONTACT: NTC: Ganesh Ram Dept. S646 (BRW)

NTZZ34MA EMC4-06-003 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 10 23 92 11 20	API 211 05 API 211 06	First Issue of insert Correction in RUL 10 (2). The NT9X13MB provides the ability to function with either NT9X14EA or NT9X14DB , but not but not both.
93 04 07	API 211 07	Introduction of New BB (NTZZ34MA) and Introduction BRISC Processor. Slot 10 on Plane 0 and Slot 29 on Plane 1 are now provisionable, and two options are available. (17AD/23AA or 17BB/69BA.
93 08 10	ECM 632 06	NTZZ34MA became MD and replaced by NTZZ34MB.

The DMS SuperNode SE Combined Cabinet: (-60V) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
DMS SuperNode SE Core Cabnt	NT9X01MB		1			AP
Message Switch Shelf Assy	NT9X0470		1	39		AP-01
Global -5V, 20A Pow. Conv.	NT9X31AB		2	39	01F, 33F	AP
Global +5V, 86A Pow. Conv.	NT9X30AB		2	39	04F, 36F	AP
T-Bus Terminator CP	NT9X49CC		2	39	07F, 32F	AP
Mapper CP	NT9X15AA		2	39	09F, 30F	AP
4-Port MS I/F CP	NT9X17AD		2	39	10F, 29F	RUL2
32-Port MS I/F CP	NT9X17BB		2	39	10F, 29F	RUL2
4-Port MS I/F CP	NT9X17AD		2	39	16F, 23F	AP
MS Processor CP	NT9X13NA		2	39	17F, 22F	AP
Combined Clock CP	NT9X53AC		2	39	18F, 21F	AP
T-Bus Access CP	NT9X52AA		2	39	19F, 20F	AP
4-Link DS30 PB	NT9X23AA		2	39	10R, 29R	RUL2
16-Link DS30 PB	NT9X69BA		2	39	10R, 29R	RUL2
32-Port MS I/F CP	NT9X17BB		2	39	11F, 28F	RUL2
(for upto 3 LPPs, no JNET)						
16-Link DS30 PB	NT9X69BA		2	39	11R, 28R	RUL2
(for upto 3 LPPs, no JNET)						
DMS SNSE MS LIS/ENI I/F	NTZZ34CA		1	39		RUL1
F-BUS Cab Assy 3-shelf (LE)	NT9X7210		2	39		RUL1
F-BUS Cab Assy 3-shelf (RI)	NT9X7212		2	39		RUL1
F-BUS Cab Assy 2-shelf (LE)	NT9X7211		2	39		RUL1
F-BUS Cab Assy 2-shelf (RI)	NT9X7213		2	39		RUL1
DMS SNSE MS 8xDS30 I/F	NTZZ34JA		1	39		RUL2
DMS SNSE MS 32xDS30 I/F	NTZZ34DA		1	39		RUL2
MS Bulkhead Assembly (left)	NT9X6550		1	39		RUL2
(for non-Cab & Mer. Initial)						
MS Bulkhead Assembly (right)	NT9X6551		1	39		RUL2
(for non-Cab & Mer. Initial)						
DS30 Cable Assembly	NT9X0434			39		RUL2
(For non-Cabinetized appl.)						
DS30 Cable Assembly	NT9X0520			39		RUL2
(with 69BA for non-Cab appl)						
DS30 IML DS30 Cable Ass.	NT9X0475		2	39		RUL2
(Overhead appl.)						
DS30 IML DS30 Cable Ass.	NT9X0433		2	39		RUL2
(Raised Floor appl.)						
MS Bulkhead Assembly (left)	NT9X6560		1	39		RUL2
(Existing Meridian appl.)						
MS Bulkhead Assembly (right)	NT9X6561		1	39		RUL2
(Existing Meridian appl.)						
IML IOC0 Cable Assembly	NT9X0478		1	39		RUL2
(Existing Meridian appl.)						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
IML IOC1 Cable Assembly (Existing Meridian appl.)	NT9X0479		1	39		RUL2
DS30 Cable Assembly (with 23AA for exi. Mer.)	NT9X0474			39		RUL2
DS30 Cable Assembly (23AA in pairs, exi. Mer.)	NT9X0182			39		RUL2
Cabinetized Bulkhead (left) (Streamline Application)	NT9X6567		1	39		RUL2
Cabinetized Bulkhead (right) (Streamline Application)	NT9X6568		1	39		RUL2
DS30 IML DS30 Cable Ass. (Cab.appl., Overhead appl.)	NT9X0489		2	39		RUL2
DS30 IML DS30 Cable Ass. (Cab.appl., Raised Flr. appl.)	NT9X0488		2	39		RUL2
IML IOC0 Cable Assembly (Cabinetized Application)	NT9X6544		1	39		RUL2
IML IOC1 Cable Assembly (Cabinetized Application)	NT9X6544		1	39		RUL2
Bulkhead Cover Plate	NTEX5070			39		RUL2
4-Port MS I/F CP	NT9X17AD		2	39	13F, 26F	RUL3
SR-512 Fiber Paddle Board	NT9X62BA		2	39	13R, 26R	RUL3
32-Port MS I/F CP	NT9X17BB		2	39	15F, 24F 14F, 25F	RUL3
DMS Bus 64 Port CP	NT9X17DA			39	15F, 24F 14F, 25F	RUL3
DMS Bus 128 Port CP	NT9X17CA			39	15F, 24F 14F, 25F	RUL3
2-Link SR512 PB	NT9X62CA			39	15R, 24R	RUL3
MS Port Expander PB	NT9X25BA			39	14R, 25R	RUL3
2-Link SR512 PB	NT9X62CA		2	39	16R, 23R	AP
RTIF PB	NT9X26AB		2	39	17R, 22R	AP
Clock Interface PB	NT9X54AC		2	39	18R, 21R	AP
MS Clock Cable Assembly	NT9X0436		1	39		AP
MS Clock Cable Assembly	NT9X0437		1	39		AP
Cable Assembly	NT9X0438		4	39		AP
MS0-MS1 Cable Assembly	NTEX5026		1	39		AP
Filler Face Plate	NT9X19AA			39		RUL4
PB Filler Face Plate	NT9X19BA			39		RUL4
Design Label (NT9X17AD)	P0735096			39	10F, 29F	RUL12
Design Label (NT9X23AA)	P0678443			39	10R, 29R	RUL12
Design Label (NT9X17BB)	P0726962			39	10F, 29F	RUL12
Design Label (NT9X69BA)	P0726964			39	10R, 29R	RUL12
Design Label (NT9X17BB)	P0726962			39	15F, 24F 14F, 25F	RUL12
Design Label (NT9X17DA)	P0707891			39	15F, 24F 14F, 25F	RUL12

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Design Label (NT9X17CA)	P0678441			39	15F, 24F 14F, 25F	RUL12
Design Label (NT9X25BA)	P0697531			39	14R, 25R	RUL12
Design Label (NT9X62CA)	P0735105			39	15R, 24R	RUL12
Shelf Strip, MS (rear, top)	P0739091		1	39		AP-01
Shelf Strip, MS (rear, bot)	P0739090		1	39		AP-01
MS Design. Strip (front)	P0739092		1	39		AP-01
MS Design. Strip (rear)	P0735784		1	39		AP-01

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Link Interface Shelf Assy	NT9X7204		1	26		AP
DMS SNSE LIS Common CP	NTZZ34LA		1	26	01F	RUL5
Filler Packfill	NT9X01FB		1	26		RUL5
Bulkhead Assembly	NT9X6534		2	26		RUL5
Cover Plate	NTEX5025		32	26		RUL5
F-Bus Extender PB	NT9X79AA		2	26	07R, 32R	RUL5
Design Label (NT9X79AA)	P0689621		2	26	07F, 32F	RUL5
F-Bus Ext with Term. PB	NT9X79BA		2	26	07R, 32R	RUL5
Design Label (NT9X79BA)	P0689622		2	26	07F, 32F	RUL5
CCS7 8 Meg LIU (E-DS0A)	NTZZ30UA			26	08F, 10F, 12F, 14F, 16F, 18F, 20F, 22F, 24F, 26F, 28F, 30F	RUL6
CCS7 8 Meg LIU (E/HC-DS0A)	NTZZ30VA			26	08F, 10F, 12F, 14F, 16F, 18F, 20F, 22F, 24F, 26F, 28F, 30F	RUL6
CCS7 8 Meg LIU (V.35)	NTZZ30WA			26	08F, 10F, 12F, 14F, 16F, 18F, 20F, 22F, 24F, 26F, 28F, 30F	RUL6
Filler Face Plate	NT9X19AA		26	26	07F-32F	RUL6
PB Filler Face Plate	NT9X19BA		26	26	07R-32R	RUL6
Shelf Strip LIS (rear, top)	P0739096			26		AP
Shelf Strip LIS (rear, bot)	P0739095			26		AP
Design.Strip LIS (front, top)	P0739097			26		AP
Shelf Strip LIS (front)	P0739094			26		AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
ENI Shelf Assembly	NT9X0810		1	13		AP
Filler Packfill	NT9X01FB		1	13		RUL7
Bulkhead Assembly (left)	NT9X6520		1	13		RUL7,9
Bulkhead Assembly (right)	NT9X6521		1	13		RUL7,9
Bulkhead Assembly (left)	NT9X6530		1	13		RUL7,9
Bulkhead Assembly (right)	NT9X6531		1	13		RUL7,9
Bulkhead Assembly	NT9X0813		2	13		RUL7,9
Streamline Bulkhead Assembly	NT9X8909		2	13		RUL7,9
DMS SNSE ENI F-Bus Common CP	NTZZ34GA		1	13		RUL8
CCS7 8 Meg LIU (E-DS0A)	NTZZ30UA			13	08F, 30F,	RUL8
CCS7 8 Meg LIU (E/HC-DS0A)	NTZZ30VA			13	08F, 30F,	RUL8
CCS7 8 Meg LIU (V.35)	NTZZ30WA			13	08F, 30F,	RUL8
DMS SNSE ENI Common CP	NTZZ34KA		1	13		RUL9
DMS SNSE 4K ENET	NTZZ34FA		1	13		RUL9
8K Crosspoint CP	NT9X35FA			13	14F-19F, 24F-29F	RUL9
4-Port DS512 Fiber I/F PB	NT9X40BB			13	14R-19R, 24R-29R	RUL9
16-Port DS30 PB	NT9X41BA			13	14R-19R, 24R-29R	RUL9
3-Port DS512 16-Port DS30 PB	NT9X45BA			13	14R-19R, 24R-29R	RUL9
Cable Assembly	NT9X0520			13		RUL9
Cable Assembly	NT9X0524			13		RUL9
Cable Assembly	NT9X0540			13		RUL9
Cable Assembly	NT9X0542			13		RUL9
Cable Assembly (Meridian)	NT9X0815			13		RUL9
Cable Assembly (Meridian)	NT9X0817			13		RUL9
Cable Assy (Streamline, XPM)	NT9X0546			13		RUL9
Cable Assy (Streamline, SLC)	NT9X0544			13		RUL9
Cable Assy (Streamline, XPM)	NT9X0547			13		RUL9
Cable Assy (Streamline, SLC)	NT9X0545			13		RUL9
Design Label (NT9X35FA)	P0735098			13	14F-19F, 24F-29F	RUL12
Design Label (NT9X40BB)	P0734155			13	14R-19R, 24R-29R	RUL12
Design Label (NT9X41BA)	P0704528			13	14R-19R, 24R-29R	RUL12
Design Label (NT9X45BA)	P0731527			13	14R-19R, 24R-29R	RUL12
Shelf Strip, ENI (front)	P0739099		1	13		AP-03
Shelf Strip, ENI (rear, bot)	P0739100		1	13		AP
Shelf Strip, ENI (rear, top)	P0739101		1	13		AP
Design Strip, ENI (front)	P0739102		1	13		AP
Design Strip, ENI (rear)	P0735786		1	13		AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Cmp Mod Sys Load Mod Sh Assy	NT9X0610		1	00		AP-01
+5V/+12V Power Conv	NT9X91AB		2	00	01F, 36F	AP
+5V/-5V Power Conv	NTDX15AB		2	00	04F, 33F	AP
System Load Module 1A	NT9X44AC		2	00	07F, 28F	AP
CPU Port CP	NT9X12AC		2	00	17F, 22F	AP
Dual Port Msg Controller CP	NT9X86AA		2	00	18F, 21F	AP
CM Processor CP	NT9X13MA		2	00	19F, 20F	RUL10
Des. Labels(NT9X13MA)	P0727357		2	00	19F, 20F	RUL12
CM Processor CP	NT9X13MB		2	00	19F, 20F	RUL10
Des. Labels(NT9X13MB)	P0737298		2	00	19F, 20F	RUL12
BRISC Processor CP	NT9X10AA		2	00	19F, 20F	RUL10
Des. Labels(NT9X10AA)	P0734152		2	00	19F, 20F	RUL12
Parallel Port Interface PB	NT9X46AA		4	00	07R, 17R 22R, 28R	AP
P-Bus Terminator PB	NT9X21AB		2	00	12R, 27R	AP
2-Link SR512 PB	NT9X62AA		2	00	18R, 21R	AP
RTIF PB for NT9X13MA & 13MB	NT9X26AB		2	00	19R, 20R	RUL10
RTIF PB for BRISC	NT9X26DB		2	00	19R, 20R	RUL10
CM Extension Cable Assembly	NT9X0167		2	00		AP
E/W 2-25 Pin Cable Assembly	NT9X0160		2	00		AP
RS-232C/Curr Loop Cable Assy	NT9X0196		2	00		AP
Cable Assembly	A0379486		8	00		AP
24 Meg Memory CP	NT9X14DB			00	12F-16F, 23F-27F	RUL10
Design Label (NT9X14DB)	P0700802			00	12F-16F, 23F-27F	RUL12
96 Meg Memory CP	NT9X14EA			00	12F-16F, 23F-27F	RUL10
Design Label (NT9X14EA)	P0736863			00	12F-16F, 23F-27F	RUL12
Filler Face Plate	NT9X19AA			00		RUL4
PB Filler Face Plate	NT9X19BA			00		RUL4
ENET/W-CM Bulkhead Assembly	NT9X6552		2	00		RUL7,9
CM/SLM Bulkhead Assembly	NT9X6553		2	00		RUL7,9
CM Design. Strip (rear)	P0735782		1	00		AP-01
CM Design. Strip (rear,bot)	P0739105		1	00		AP-01
Shelf Strip, CM/SLM (rear,t)	P0739106		1	00		AP-01
Design Strip, CM/SLM (front)	P0739107		1	00		AP-01
Optical Fiber Label(German)	P0737638					AP
Cabinet Mechanical Hardware						RUL13
Misc Hardware - Grey	NTZZ30JA		1			RUL13
Misc Hardware - Brown	NTZZ30KA		1			RUL13
Cable Trough (Brown)	NT0X24BH		1			RUL13
End Panel Assy Kit (Brown)	NTRX07AE		2			RUL13
Cable Trough (Grey)	NT0X25AX		1			RUL13

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
End Panel Assy Kit (Grey)	NTRX07AB		2			RUL13
Frame Sup.Panel (-60V)	NT9X03BA	FSP	1	52		RUL13
Cooling Unit (-60V)	NT9X95GU	CU	1	00		RUL13
Stand-alone Power Cab. kit	NT9X9532		1			RUL14
Horizontal Power Cab.kit	NT9X9531		1			RUL14
EMI Contact Strips	P0714698		2			RUL14

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase.
Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if
they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufac-
tured and cannot be ordered.

NOTES:

RULES:

- AP 1) When PEC NTZZ34MA is ordered, these items are provided.
- AP-01 1) These items are provided with NT9X01MB and are listed here
for reference.
- AP-02 1) These items are provided with NT9X7204 and are listed here
for reference.
- AP-03 1) These items are provided with NT9X0810 and are listed here
for reference.

- RUL1
- 1) If ASUs are provisioned on either the LIS or ENI shelf, provide one (1) NTZZ34CA DMS SuperNode SE MS LIS/ENI Interface.
 - 2) To connect the F-BUS from the MS to the LIS shelf only, provide two (2) NT9X7211 F-BUS Cables (LE) and two (2) NT9X7213 F-BUS Cables (RI).
 - 3) To connect the F-BUS from the MS to the ENI and optional LIS, provide two (2) NT9X7210 F-BUS Cables (LE) and two (2) NT9X7212 F-BUS Cables (RI).
 - 4) If there are no ASUs in the LIS or ENI shelf, there is no need to extend the F-Bus from the MS down to the LIS or ENI shelves, in which case, do not order NTZZ34CA Building Block.
- RUL2
- 1) SuperNode SE supports up to six IOCs when configured for the LEC/IEC markets, and up to eight IOCs in the MTX markets. IOC 0, IOC 1, and 2 mandatory Inter-Message-Links (IML), must always be on slot 10 for plane 0 & slot 29 for plane 1.
 - 2) To provision Message Switch for up to two (2) IOCs, equip slots 10F and 29F with NT9X17AD (4 Port MS Interface card) port cards and 10R and 29R with NT9X23AA (4 Link DS-30 Paddle Boards).
 - 3) To provision Message Switch with more than two (2) IOCs and up to eight (8) IOCs, equip slots 10F and 29F with NT9X17BB (32 Port MS Interface card) port cards and 10R and 29R with NT9X69BA (16 Link DS-30 Paddle Boards).
 - 4) To provision Message Switch with up to three (3) LPPs, without JNET, equip slots 10F,11F and 29F,28F with NT9X17BB (32 Port MS Interface card) port cards and 10R,11R and 29R,28R with NT9X69BA (16 Link DS-30 Paddle Boards).
 - 5) The maximum number of JNET network modules that may be provisioned is seven (7) for LEC/IEC markets, except for MSL applications where the limit is ten (10). To support up to four (4) JNET network modules,without LPP, provision one (1) NTZZ34JA DMS SuperNode SE MS 8xDS30 Interface. To support up to ten (10) JNET network modules, and or up to three (3) LPPs, provision one (1) NTZZ34DA DMS SuperNode SE MS 32xDS30 Interface.
 - 6) Bulkheads MUST ALWAYS be job engineered on the MS shelf.

- 7) The NT9X6550 and NT9X6551 Bulkheads can be used, when NT9X23AA PBs are used in slots 10 thru 12 for Plane 0 and in slots 29 thru 27 for Plane 1 for non-Cabinetized and Meridian Initials (not SNSE retrofit) applications.
- For non-Cabinetized and Meridian Initials, provision,
 - NT9X0434 DS30 Cable Assemblies for each 9X23AA provisioned.
 - NT9X0520 DS30 Cable Assemblies for each 9X69BA provisioned.
 - two (2) NT9X0475 IML DS30 Cable Assemblies (for overhead)

(OR)

- two (2) NT9X0433 IML DS30 Cable Assemblies(for raised floor)

Note that NT9X0434 cables are to be used only with NT9X23AA.

- 8) NT9X6560 and NT9X6561 bulkheads can be used when NT9X23AA PBs are used in slots 10 thru 14 for Plane 0 and in slots 29 thru 25 for Plane 1 for existing Meridian offices. Note that NT9X69BA cannot be used with NT9X6560 and 6561 bulkheads.
- For Existing Meridian applications, provision
 - one (1) NT9X0478 IML IOC0 Cable Assembly(right)
 - one (1) NT9X0479 IML IOC1 Cable Assemblies(left)
 - NT9X0474 DS30 Cable Assembly for each 9X23AA provisioned in slots 11 thru 14 for Plane 0 and in slots 28 thru 25 for Plane 1, only for IOCs.
 - NT9X0182 DS30 Cable Assemblies for each pair of 23AAs provisioned in slots 11 thru 14 for Plane 0 and in slots 28 thru 25 for Plane 1.
- 9) NT9X6567 and NT9X6568 bulkheads can be used when NT9X23AA PBs are used in slots 10 for Plane 0, and in slots 29 for Plane 1 for Cabinetized(streamline) offices. Note that NT9X69BA cannot be used with NT9X6567 and 6568 bulkheads. Provision one (1) NTEX5070 cover plate for each unused cable positions in NT9X6567 and NT9X6558 bulkheads. There are a total of 20 positions in each of these bulkheads.
- For Streamline application provision,
 - one (1) NT9X6544 IML IOC0 Cable Assembly for 23AA in slot 10 for Plane 0.
 - one (1) NT9X6544 IML IOC1 Cable Assembly for 23AA

in slot 29 for Plane 1.

- two (2) NT9X0489 IML DS30 Cable Assemblies (for overhead)

(OR)

- two (2) NT9X0488 IML DS30 Cable Assemblies (for raised floor)

Note that no NT9X69BA and no other NT9X23AA other than in slot 10 are provisioned with Cabinetized (Streamline) application.

RUL3 1) Message Switch Configurations

The range of port cards and paddle boards that are supported by the SuperNode SE allows it to be configured with up to 8 Input/Output Controllers (IOC), 2 mandatory Inter-Message-Links (IML), upto 3 Link Peripheral Processors (LPP), and either a fully equipped 16K channel Enhanced Network (ENET) or upto 7 junctored Network Modules (JNET/NMs). Note that MSL Cabinet packaged systems can support upto 10 NMs. Where ENET 16K is used, the message switch also provides two slots for interfaces to Application/File Processors(AP/FP) and or Single Shelf LPPs (SSLPP or FLIS) external to the SNSE cabinet.

To Provision Message Switch for internal LIS interface, equip slots 8F and 31F with NT9X73BA(Rate Adapter CP) and 8R and 31R with NT9X79BA, F-Bus Extender Paddle Board.

		ENET	ENET	JNET	JNET
	MS SLOTS	MS P-side ports < than or equal to 128	MS P-side ports > than 128 but < than 256	1 - 4 Network Modules	5 - 7 Net. Mod. OR 10NMs for MSL appl.
2 IMLs 2 IOCs & 0 LPP & 1 FLIS	10 & 29 11 & 28 12 & 27 13 & 26 14 & 25 15 & 24	17AD/23AA 17AD/62BA *17xx/25BA 17DA/62CA	17AD/23AA 17AD/62BA 17CA/62CA 17CA/62CA	17AD/23AA 17AD/23AA 17AD/23AA 17AD/62BA	17AD/23AA 17BB/69BA 17BB/69BA 17AD/62BA
2 IMLs upto 8 IOcs & 0 LPPs	10 & 29 11 & 28 12 & 27 13 & 26 14 & 25 15 & 24	17BB/69BA *17xx/25BA 17DA/62CA	17BB/69BA 17CA/62CA 17CA/62CA	17BB/69BA 17AD/23AA 17AD/23AA	17BB/69BA 17BB/69BA 17BB/69BA
2 IMLs upto 8 IOcs & 3 LPPs	10 & 29 11 & 28 12 & 27 13 & 26 14 & 25 15 & 24	17BB/69BA 17BB/69BA *17xx/25BA 17DA/62CA	17BB/69BA 17BB/69BA 17CA/62CA 17CA/62CA	17BB/69BA 17BB/69BA 17BB/69BA	17BB/69BA 17BB/69BA 17BB/69BA

Note that the SuperNode SE can support either ENET or JNET configurations. It cannot support mixed ENET and JNET configurations, because JNET cannot interwork with ENET.

* See the next table.

- 2) Use the following table to provide the circuit packs necessary for the required maximum number of MS and ENET ports.

P-side ports/ MS Plane	P-Side Peripheral Msg ports/ ENET plane	slot 15 & 24		slot 14 & 25	
		Front Front	Rear Rear	Front Front	Rear Rear
32	15	17BB	62CA	-	-
64	31	17DA	62CA	-	-
96	47	17DA	62CA	17BB	25BA
128	63	17DA *17CA	62CA 62CA	17DA -	25BA -
256	127	*17CA	62CA	17CA	62CA

The circuit pack fill order is:

- 1) 15F/R (MS 0) and 24F/R (MS 1),
 - 2) 14F/R (MS 0) and 25F/R (MS 1).
- 3) To support ENET and up to 15 peripheral message ports per ENET plane, provision two (2) NT9X17BB 32-Port MS Interface Circuit Packs in slot positions 15F for Plane 0 and 24F for Plane 1, and two (2) NT9X62CA 2-Link SR512 Paddleboards in slot positions 15R and 24R.
- 4) To support ENET and up to 31 peripheral message ports per ENET plane, provision two (2) NT9X17DA 64-Port MS Interface Circuit Packs in slot positions 15F and 24F, and two (2) NT9X62CA 2-Link SR512 Paddleboards in slot positions 15R and 24R.

- 5) To provide 16 or 32 peripheral message ports per ENET plane in addition to the ports provided in 3) or 4) above, provision two (2) NT9X17BB 32-Port MS Interface Circuit Packs (for 16 additional ports)

OR

two (2) NT9X17DA 64-Port MS Interface Circuit Packs (for 32 additional ports) in slot positions 14F and 25F, and two (2) NT9X25BA MS Port Expander Paddleboards in slot positions 14R and 25R. Note that the NT9X25BA should always be provided as the last paddleboard in an MS port card chain.

Also note that, mixed 17BB & 17DA configurations are not supported until BCS35.

If the number of message ports required for interfacing with ENET is greater than 128, but less than 256, provide the NT9X17CA MS 128-Port CPs in two consecutive slots. Note that NT9X62CA must always be provisioned in slots 15R and 14R for this scenario.

6) SR512 Ports

Slots 13 and 26 are always available for additional functionality (That is AP/FP/SSLPP).

To add FLIS provide, two (2) NT9X17AD and two (2) NT9X62BA. To add AP/FP provide, two (2) NT9X17DA and two (2) NT9X62BA.

- RUL4 1) Provision NT9X19AA Filler Face Plates and NT9X19BA Paddleboard Filler Face Plates for all unoccupied slots.

- RUL5 1) Provide one (1) NTZZ34LA DMS SNSE LIS Common CP in shelf position 26 if LIUs are to be provisioned for -60V applications.

If LIUs are equipped on the LIS and ENI shelves, provide:
two (2) NT9X79AA F-Bus Extender Paddleboards and,
two (2) NT9X79AA Des. Labels (P0689621).
These items extend the F-Bus on to the ENI shelf.

If LIUs are equipped on the LIS shelf only, provide:
two (2) NT9X79BA F-Bus Extender with BUS Termination PBs
two (2) NT9X79BA Des. Labels (P0689622).
The NT9X79BA terminate the F-Bus on the LIS shelf.

Provision one (1) NTEX5025 Cover Plate for each unused cable position on the NT9X6534 Bulkhead Assemblies. There are a total of 32 cable connector positions on the bulkheads, 16 on each side.

- 2) If ASU functionality is not required on the LIS shelf, provide one (1) NT9X01FB Filler Packfill, two (2) NT9X6534 LIS Bulkhead Assemblies, and thirty-two (32) NTEX5025 Cover Plates.

Bulkheads MUST ALWAYS be ordered on the LIS shelf, even if fillers are the only packs shipped with the SuperNode SE cabinet.

The NT9X01FB filler packfill contains:

- four (4) NT9X19CA Power Filler Face Plates,
- two (2) NT9X0314 FSP Shorting Plugs (B0225296),
- twenty-six (26) NT9X19AA Filler Face Plates and
- twenty-six (26) NT9X19BA Paddleboard Filler Face Plates,

- RUL6 1) A total of up to twelve (12) LIUs may be provisioned on the LIS. Provision any combination of:

NTZZ30UA CCS7 8 Meg LIU (E-DS0A)
NTZZ30VA CCS7 8 Meg LIU (E/HC-DS0A)
NTZZ30WA CCS7 8 Meg LIU (V.35)

- 2) Provide NT9X19AA Front Filler circuit packs and NT9X19BA Rear Filler paddleboards for all unequipped slots in the LIS shelf.

- RUL7 1) If ENET or LIU functionality is not required in the ENI shelf, and the cabinet is to be shipped with an empty ENI Shelf Assembly, provide one (1) NT9X01FB Filler Packfill, two (2) ENI bulkheads, and two (2) NT9X6553 CM/SLM bulkheads.

The NT9X01FB filler packfill contains:

- four (4) NT9X19CA Power Filler Face Plates,
- two (2) NT9X0314 FSP Shorting Plugs (B0225296),
- twenty-six (26) NT9X19AA Filler Face Plates and
- twenty-six (26) NT9X19BA Paddleboard Filler Face Plates,

Bulkheads MUST ALWAYS be provided on the ENI shelf, even if fillers are the only packs shipped in the ENI shelf.

Bulkheads MUST ALWAYS be provided on the CM/SLM shelf.

- 2) The ENI and CM/SLM bulkheads are provisioned as follows:

BULKHEAD PROVISIONING

The ENI bulkheads have different connectors for non-Cabinetized, Meridian as well as Streamline applications. The bulkhead NT9X6553 is the common CM/SLM bulkhead for Standard, Meridian and Streamline applications.

The NT9X6520/21 pair always requires the NT9X6553 CM/SLM bulkhead for 1 to 48 DS30 links. The NT9X6520/21 pair always requires the NT9X6552 CM/SLM bulkhead for 49 to 96 DS30 links.

Choose one of the bulkhead options listed below:

For standard applications without an SLC, with up to 48 DS30 links provision:

- one (1) NT9X6520 ENI Bulkhead Assembly (left),
- one (1) NT9X6521 ENI Bulkhead Assembly (right) and
- two (2) NT9X6553 CM/SLM Bulkhead Assemblies.

The NT9X6553 CM/SLM bulkheads have no DS30 connection capability.

For standard applications without an SLC, with more than 48 DS30 links, but less than or equal to 96 DS30 links provision:

- one (1) NT9X6520 ENI Bulkhead Assembly (left),
- one (1) NT9X6521 ENI Bulkhead Assembly (right) and
- two (2) NT9X6552 CM/SLM Bulkhead Assemblies

The NT9X6552 CM/SLM bulkheads have extra DS-30 connection capacity.

For standard applications with an SLC, and with more than 48 DS30 links, but less than or equal to 112 DS30 links provision:

one (1) NT9X6530 ENI Bulkhead Assembly (left),
one (1) NT9X6531 ENI Bulkhead Assembly (right) and
two (2) NT9X6553 CM/SLM Bulkhead Assemblies.

The CM bulkhead is required when the DS-30 channel capacity exceeds 48 DS-30s per ENET plane, without an SLC. Forty-eight DS-30s is the maximum connection capacity of a single NT9X6520/21 ENI bulkhead.

- 3) For Meridian applications, provision:
 - two (2) NT9X0813 Bulkhead Assemblies and
 - two (2) NT9X6553 CM/SLM Bulkhead Assemblies.
- 4) For Streamline applications, provision:
 - two (2) NT9X8909 Streamline Bulkhead Assemblies and
 - two (2) NT9X6553 CM/SLM Bulkhead Assemblies.

Provision one (1) NTEX5025 Cover Plate for each unused cable position on the NT9X8909 Bulkhead Assemblies. There are a total of 28 cable connector positions on the bulkheads, 14 on each side. Note that, when using NT9X8909 ENI Bulkhead with Cabinetized TME without an SLC, only upto a maximum of 14 8-DS30 cables can be used.

- RUL8 1) If LIU functionality is required on the ENI shelf, and ENET has been provided, provision one (1) NTZZ34GA DMS SNSE ENI F-Bus Common CP.

- 2) Provision any combination of:

NTZZ30UA CCS7 8 Meg LIU (E-DS0A),
NTZZ30VA CCS7 8 Meg LIU (E/HC-DS0A),
NTZZ30WA CCS7 8 Meg LIU (V.35)
as required.

Note:

A total of up to two (2) LIUs may be provisioned on the ENI shelf.

The ENI shelf cannot support LIUs without the provisioning of an ENET. The reason for this restriction is that the ENET processor circuit packs control the power lock-out for the ENI shelf. If there are no ENET processor packs, there is no power supplied to the ENI shelf.

RUL9 1) The minimum allowable ENET configuration is 4K, with 2K of the initial 4K channels assigned for messaging between the MS and the ENET. The ENET on SuperNode SE is only available in 4K, 8K, 12K and 16K configurations.

- 2) For a 4K ENET, provision one (1) NTZZ34FA DMS SNSE 4K ENET, one (1) NTZZ34KA DMS SNSE ENI Common CP and see item 6) below for cable provisioning requirements.

Provide front fillers (NT9X19AA) and paddleboard fillers (NT9X19BA) for all unprovisioned slots. All slots must be filled to ensure proper air flow for cooling.

- 3) For an 8K ENET, provision one (1) NTZZ34FA DMS SNSE 4K ENET, one (1) NTZZ34KA DMS SNSE ENI Common CP and four (4) NT9X35FA 8K Crosspoint Circuit Packs in slots 14F, 15F for Plane 0, and 24F and 25F for Plane 1.

Also provision any combination of NT9X40BB 4-Port DS512 Fiber Interface Paddleboards, NT9X41BA 16-Port DS30 Paddleboards and NT9X45BA 3-Port DS512 + 16-Port DS30 Paddleboards in slots 14R, 15R, 24R and 25R, provided that slots 14R and 24R have matching paddleboards and slots 15R and 25R also have matching paddleboards.

Also, see 6) below for cable provisioning requirements. Provide front fillers (NT9X19AA) and paddleboard fillers (NT9X19BA) for all unprovisioned slots. All slots must be filled to ensure proper air flow for cooling.

- 4) For a 12K ENET, provision one (1) NTZZ34FA DMS SNSE 4K ENET, one (1) NTZZ34KA DMS SNSE ENI Common CP, and eight (8) NT9X35FA 8K Crosspoint Circuit Packs in slots 14F to 17F for Plane 0 and 24F to 27F for Plane 1.

Also provision any combination of NT9X40BB 4 Port DS512 Fiber Interface Paddleboards, NT9X41BA 16-Port DS30 Paddleboards and NT9X45BA 3-Port DS512 16-Port DS30 Paddleboards in slots 14R to 17R and 24R to 27R, providing that matching paddleboards are used in each of the following pairs of slots:
14R and 24R; 15R and 25R;
16R and 26R; 17R and 27R.

The total number of NT9X41BA and NT9X45BA Paddleboards may not exceed four (4) per ENET plane for Meridian applications.

Also, see 6) below for cable provisioning requirements.

Provide front fillers (NT9X19AA) and paddleboard fillers (NT9X19BA) for all unprovisioned slots. All slots must be filled to ensure proper air flow for cooling.

- 5) For a 16K ENET, provision one (1) NTZZ34FA DMS SNSE 4K ENET, one (1) NTZZ34KA DMS SNSE ENI Common CP and twelve (12) NT9X35FA 8K Crosspoint Circuit Packs in slots 14F to 19F and 24F to 29F.

Also provision any combination of NT9X40BB 4-Port DS512 Fiber Interface Paddleboards, NT9X41BA 16-Port DS30 Paddleboards and NT9X45BA 3-Port DS512 16-Port DS30 Paddleboards in slots 14R to 19R and 24R to 29R, provided that matching paddleboards are used in each of the following pair of slots:

14R and 24R; 15R and 25R;
16R and 26R; 17R and 27R;
18R and 28R; 19R and 29R.

The total number of DS30 ports provided by the NT9X41BA and NT9X45BA Paddleboards may not exceed ninety-six (96) per ENET plane due to the limit of bulkhead cable connectors available to terminate DS30 links.

The total number of NT9X41BA and NT9X45BA Paddleboards may not exceed four (4) per ENET plane for Meridian applications.

The paddleboards in slots 19R and 29R can not be used for DS30 links if NT9X6520 and 6521 bulkheads are provisioned.

Also, see 6) below for cable provisioning requirements. Provide front fillers (NT9X19AA) and paddleboard fillers (NT9X19BA) for all unprovisioned slots. All slots must be filled to ensure proper air flow for cooling.

- 6) For Standard applications, provision:

one (1) NT9X0520 Cable Assembly per NT9X41BA and
one (1) NT9X0524 Cable Assembly per NT9X45BA
(if the NT9X41BA or NT9X45BA is in slot 17R or 18R and requires DS30 connections to the CM bulkhead in position 00, use NT9X0540 instead of NT9X0520 and NT9X0542 instead of NT9X0524).

for Meridian applications, provision:

one (1) NT9X0815 Cable Assembly per NT9X41BA and
one (1) NT9X0817 Cable Assembly per NT9X45BA.
for up to 64 DS-30s.

For Streamline applications, provision:

one (1) NT9X0546 Cable Assembly per NT9X41BA and

one (1) NT9X0547 Cable Assembly per NT9X45BA
(when an SLC is provided, use NT9X0544 instead of NT9X0546
and use NT9X0545 instead of NT9X0547).
Both of the above cabling scenarios for Streamline allow
the termination of up to 112 DS-30 links.

Note:

The NT9X40BB only has fiber ports and fiber cables do not
terminate on the bulkhead. The cables from this paddleboard
go through a hole in the bulkhead and connect directly to
the fiberized peripheral.

7) BULKHEAD PROVISIONING

The ENI bulkheads have different connectors for Standard,
Meridian as well as Streamline applications. The bulkhead
NT9X6553 is the common CM/SLM bulkhead for Standard,
Meridian and Streamline applications.

The NT9X6520/21 pair always requires the NT9X6553 CM/SLM
bulkhead for 1 to 48 DS30 links. The NT9X6520/21 pair al-
ways requires the NT9X6552 CM/SLM bulkhead for 49 to 96
DS30 links.

The ENI and CM/SLM bulkheads are provisioned as follows:
Choose one of the bulkhead options listed below:

For standard applications without an SLC, with up to 48
DS30 links provision:

one (1) NT9X6520 ENI Bulkhead Assembly (left),
one (1) NT9X6521 ENI Bulkhead Assembly (right) and
two (2) NT9X6553 CM/SLM Bulkhead Assemblies.

The NT9X6553 CM/SLM bulkheads have no DS30 connection capa-
bility.

For standard applications without an SLC, with more than 48
DS30 links, but less than or equal to 96 DS30 links pro-
vision:

one (1) NT9X6520 ENI Bulkhead Assembly (left),
one (1) NT9X6521 ENI Bulkhead Assembly (right) and
two (2) NT9X6552 CM/SLM Bulkhead Assemblies

The NT9X6552 CM/SLM bulkheads have extra DS-30 connection
capacity.

For standard applications with an SLC, and with more than
48 DS30 links, but less than or equal to 112 DS30 links
provision:

one (1) NT9X6530 ENI Bulkhead Assembly (left),
one (1) NT9X6531 ENI Bulkhead Assembly (right) and

two (2) NT9X6553 CM/SLM Bulkhead Assemblies.

The CM bulkhead is required when the DS-30 channel capacity exceeds 48 DS-30s per ENET plane, without an SLC. Forty-eight DS-30s is the maximum connection capacity of a single NT9X6520/21 ENI bulkhead.

- RUL10 1) Provide two NT9X13MA processors to support the CM section of the SuperNode SE. The NT9X13MA supports 24Mb memory only. The RTIF PB NT9X26AB will have to be provisioned with NT9X13MA processor.
- 2) For new jobs at BCS35 and higher, provide the NT9X13MB processor circuit boards. The NT9X13MB Processor provides ability to function with either NT9X14EA (96 Meg memory) or NT9X14DB (24 Meg memory), but not both. That is NT9X14DB and NT9X14EA WILL NOT be supported in a mixed configuration. Check availability prior to ordering NT9X14EA. The RTIF PB NT9X26AB will have to be provisioned with NT9X13MB processor.
- 3) The NT9X14EA memory boards have the capability to function in burst mode. Burst mode memory is required to fully utilize the Series 60 BRISC processor (BRISC not available until BCS36). The new RTIF NT9X26DB will have to be provisioned with this BRISC processor. 4) The NT9X14DB 24Mb circuit boards are to be provided for memory extensions of existing offices at BCS34. Note that 24Mb circuit boards do not function in burst mode.
- 5) Provision memory circuit packs in pairs, in slots in the following order:
- 1) 16F and 23F;
 - 2) 15F and 24F;
 - 3) 14F and 25F;
 - 4) 13F and 26F;
 - 5) 12F and 27F.

The number of pairs to be provisioned depends on the memory requirement for the office.

RUL11 Deleted

RUL12 1) Provide designation labels as required.

RUL13 1) Provide mechanical hardware for the S/DMS cabinet, such as end guards, frame isolating pads and anchors by using the Engineering Manual inserts:

NT9X95AA - Mechanical Hardware for S/DMS Cabinet,
NTRX73 - Cabinetized DMS Cosmetic Endguards
and EMI Sidepanels.

- 2) Provision one (1) NTZZ30JA - Miscellaneous Hardware - Grey and two (2) NTRX07AB End Panel Assy Kits (Grey) for grey cabinets.

Provide one (1) Cable Trough (Grey) (NT0X25AX) for offices with a grey SNSE cabinet and overhead cabling.

OR

- 3) Provision one (1) NTZZ30KA - Miscellaneous Hardware - Brown. and two (2) NTRX07AE End Panel Assy Kits (Brown) for brown cabinets.

Provide one (1) Cable Trough (Brown) (NT0X24BH) for offices with a brown SNSE cabinet and overhead cabling.

- 4) Provide one (1) NT9X03BA, Frame Supervisory Panel, per Cabinet for -60V powered installations.
- 5) Provide one (1) NT9X95GU, Cooling Unit, per cabinet for -60V powered installations. This unit comes with 3 replaceable blower assemblies(A0382103), and a replaceable electronics module(A0383326) installed. However, customers may desire spares. The Cooling Unit mounts immediately below position 00.

- RUL14 1) Provide one (1) NT9X9532 stand-alone Cabling Interface Kit when powering the NT9X01MB cabinet from the 7 foot PDC frame OR powering from the new CPDC (NTRX31CA) cabinet, OR powering from the NTRX31AA or from the NTRX31BA CPDC cabinet which is in the different lineup than the NT9X01MB. This kit includes cables, filters, and miscellaneous mounting hardware.
- Twenty-two (22) white boots are included in the NT9X9532 stand-alone Cabling Interface Kit.

Note: The twenty-two white boots MUST NOT be installed on the manufacturing shop floor. The boots must be shipped separately (loose) and installed at the job site.

- 2) Provide one (1) NT9X9531 Horizontal Power Cabling Interface Kit when powering the NT9X01MB cabinet from the NTRX31AA or from the NTRX31BA CPDC cabinet which is in the same lineup as the NT9X01MB. This kit includes power cables, terminal blocks, and miscellaneous mounting hardware.

Always provide:

two (2) EMI contact strips (P0714698)

when providing the NT9X9531 Horizontal Power Cabling Interface Kit.

DMS SUPERNODE SE

PEC CODE: NTZZ34AC

CPC CODE: B0238583

| RATING: Manufacture Discontinued

REPLACES: NTZZ34AB

| REPLACED BY: NTZZ34AE

ABBREVIATION NAME: SCC

ENGINEERING DESCRIPTION: The SNSE houses a Computing Module (CM), a System Load Module (SLM1A), a Message Switch(MS), an Enhanced Network(ENET) and a Link Interface Shelf(LIS).

REFERENCE DOCUMENTATION: SL9X01MB 00 08
SLZZ34AC 00 02
NTZZ34AC REL 02
MS9X01MB 01 09

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA
Carrier
Wireless

ISSUE AUTHOR: NTI: Jerry Palmer Dept. 3471 (PPK)

MAIN CONTACT: NTI: Jerry Palmer Dept. 3471 (PPK)

NTZZ34AC EMC4-06-004 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 03 22	ECM 632 05	Introduction of New BB in issue 05. Slot 10 on Plane 0 and Slot 29 on Plane 1 are now provisionable, and two options are available. (17AD/23AA or 17BB/69BA.
93 08 10	ECM 632 06	modifications to RUL3 and RUL7 (4). When using NT9X8909 ENI BH with Cab. TME (CTME) without SLC only upto a maximum of 14 8-DS30 Cables can be used.
93 12 21	ECM 632 07	Changes due to ECD.: 006-18370. Introduction of NT9X0183 and NT9X0187 cables for cabinetized BHS 9X6567/68. Cables must be used with NT9X69BA cps. Changes to item 9 of RUL2. NT9X62CA must always be used. DO NOT use NT9X25BA in MS for ENET appl..
94 02 23	ECM 632 08	Solve Ets 18539 and 47123. Text changes to RUL2 Item 7.
94 03 10	ECM 632 09	Replace the NT9X95AA with the NT9X95BA. (ECD: 018-41431)
94 06 16	ECM 632 10	Retire Section.

The DMS SuperNode SE is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
DMS SuperNode SE Core Cabnt	NT9X01MB		1			AP
Message Switch Shelf Assy	NT9X0470		1	39		AP-01
-5V Power Converter	NT9X31AA		2	39	01F, 33F	AP
+5V Power Converter	NT9X30AA		2	39	04F, 36F	AP
T-Bus Terminator CP	NT9X49CC		2	39	07F, 32F	AP
Mapper CP	NT9X15AA		2	39	09F, 30F	AP
4-Port MS I/F CP	NT9X17AD		2	39	10F, 29F	RUL2
32-Port MS I/F CP	NT9X17BB		2	39	10F, 29F	RUL2
4-Port MS I/F CP	NT9X17AD		2	39	16F, 23F	AP
MS Processor CP	NT9X13NA		2	39	17F, 22F	AP
Combined Clock CP	NT9X53AC		2	39	18F, 21F	AP
T-Bus Access CP	NT9X52AA		2	39	19F, 20F	AP
4-Link DS30 PB	NT9X23AA		2	39	10R, 29R	RUL2
16-Link DS30 PB	NT9X69BA		2	39	10R, 29R	RUL2
32-Port MS I/F CP	NT9X17BB		2	39	11F, 28F	RUL2
(for upto 3 LPPs, no JNET)						
16-Link DS30 PB	NT9X69BA		2	39	11R, 28R	RUL2
(for upto 3 LPPs, no JNET)						
DMS SNSE MS LIS/ENI I/F	NTZZ34CA		1	39		RUL1
F-BUS Cab Assy 3-shelf (LE)	NT9X7210		2	39		RUL1
F-BUS Cab Assy 3-shelf (RI)	NT9X7212		2	39		RUL1
F-BUS Cab Assy 2-shelf (LE)	NT9X7211		2	39		RUL1
F-BUS Cab Assy 2-shelf (RI)	NT9X7213		2	39		RUL1
DMS SNSE MS 8xDS30 I/F	NTZZ34JA		1	39		RUL2
DMS SNSE MS 32xDS30 I/F	NTZZ34DA		1	39		RUL2
MS Bulkhead Assembly (left)	NT9X6550		1	39		RUL2
(for non-Cab & Mer. Initial)						
MS Bulkhead Assembly (right)	NT9X6551		1	39		RUL2
(for non-Cab & Mer. Initial)						
DS30 Cable Assembly	NT9X0434			39		RUL2
(For non-Cabinetized appl.)						
DS30 Cable Assembly	NT9X0520			39		RUL2
(with 69BA for non-Cab appl)						
DS30 IML DS30 Cable Ass.	NT9X0475		2	39		RUL2
(Overhead appl.)						
DS30 IML DS30 Cable Ass.	NT9X0433		2	39		RUL2
(Raised Floor appl.)						
MS Bulkhead Assembly (left)	NT9X6560		1	39		RUL2
(Existing Meridian appl.)						
MS Bulkhead Assembly (right)	NT9X6561		1	39		RUL2
(Existing Meridian appl.)						
IML IOC0 Cable Assembly	NT9X0478		1	39		RUL2
(Existing Meridian appl.)						
IML IOC1 Cable Assembly	NT9X0479		1	39		RUL2

Retired Equipment
DMS SuperNode SE

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EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
(Existing Meridian appl.)						
DS30 Cable Assembly	NT9X0474			39		RUL2
(with 23AA for exi. Mer.)						
DS30 Cable Assembly	NT9X0182			39		RUL2
(23AA in pairs, exi. Mer.)						
Cabinetized Bulkhead (left)	NT9X6567		1	39		RUL2
(Streamline Application)						
Cabinetized Bulkhead (right)	NT9X6568		1	39		RUL2
(Streamline Application)						
14 port DS30 cable assembly	NT9X0483			39		RUL2
6 port DS30 cable assembly	NT9X0487			39		RUL2
DS30 IML DS30 Cable Ass.	NT9X0489		2	39		RUL2
(Cab.appl., Overhead appl.)						
DS30 IML DS30 Cable Ass.	NT9X0488		2	39		RUL2
(Cab.appl., Raised Flr. appl.)						
IML IOC0 Cable Assembly	NT9X6544		1	39		RUL2
(Cabinetized Application)						
IML IOC1 Cable Assembly	NT9X6544		1	39		RUL2
(Cabinetized Application)						
Bulkhead Cover Plate	NTEX5070			39		RUL2
4-Port MS I/F CP	NT9X17AD		2	39	13F, 26F	RUL3
SR-512 Fiber Paddle Board	NT9X62BA		2	39	13R, 26R	RUL3
32-Port MS I/F CP	NT9X17BB		2	39	15F, 24F	RUL3
					14F, 25F	
DMS Bus 64 Port CP	NT9X17DA			39	15F, 24F	RUL3
					14F, 25F	
DMS Bus 128 Port CP	NT9X17CA			39	15F, 24F	RUL3
					14F, 25F	
2-Link SR512 PB	NT9X62CA			39	15R, 24R	RUL3
2-Link SR512 PB	NT9X62CA			39	14R, 25R	RUL3
2-Link SR512 PB	NT9X62CA		2	39	16R, 23R	AP
RTIF PB	NT9X26AB		2	39	17R, 22R	AP
Clock Interface PB	NT9X54AC		2	39	18R, 21R	AP
MS Clock Cable Assembly	NT9X0436		1	39		AP
MS Clock Cable Assembly	NT9X0437		1	39		AP
Cable Assembly	NT9X0438		4	39		AP
MS0-MS1 Cable Assembly	NTEX5026		1	39		AP
Filler Face Plate	NT9X19AA			39		RUL4
PB Filler Face Plate	NT9X19BA			39		RUL4
Design Label (NT9X17AD)	P0735096			39	10F, 29F	RUL12
Design Label (NT9X23AA)	P0678443			39	10R, 29R	RUL12
Design Label (NT9X17BB)	P0726962			39	10F, 29F	RUL12
Design Label (NT9X69BA)	P0726964			39	10R, 29R	RUL12
Design Label (NT9X17BB)	P0726962			39	15F, 24F	RUL12
					14F, 25F	
Design Label (NT9X17DA)	P0707891			39	15F, 24F	RUL12

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Design Label (NT9X17CA)	P0678441			39	14F, 25F 15F, 24F	RUL12
Design Label (NT9X62CA)	P0735105			39	14F, 25F 14R, 25R, 15R, 24R	RUL12
Shelf Strip, MS (rear, top)	P0739091		1	39		AP-01
Shelf Strip, MS (rear, bot)	P0739090		1	39		AP-01
MS Design. Strip (front)	P0739092		1	39		AP-01
MS Design. Strip (rear)	P0735784		1	39		AP-01

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Link Interface Shelf Assy	NT9X7204		1	26		AP
Bulkhead Assembly	NT9X6534		2	26		AP
DMS SNSE LIS Common CP	NTZZ34EA		1	26	01F	RUL5
Filler Packfill	NT9X01FB		1	26		RUL5
Cover Plate	NTEX5025		32	26		RUL5
F-Bus Extender PB	NT9X79AA		2	26	07R, 32R	RUL5
Design Label (NT9X79AA)	P0689621		2	26	07F, 32F	RUL5
F-Bus Ext with Term. PB	NT9X79BA		2	26	07R, 32R	RUL5
Design Label (NT9X79BA)	P0689622		2	26	07F, 32F	RUL5
CCS7 8 Meg LIU (E-DS0A)	NTZZ30UA			26	08F, 10F, 12F, 14F, 16F, 18F, 20F, 22F, 24F, 26F, 28F, 30F	RUL6
CCS7 8 Meg LIU (E/HC-DS0A)	NTZZ30VA			26	08F, 10F, 12F, 14F, 16F, 18F, 20F, 22F, 24F, 26F, 28F, 30F	RUL6
CCS7 8 Meg LIU (V.35)	NTZZ30WA			26	08F, 10F, 12F, 14F, 16F, 18F, 20F, 22F, 24F, 26F, 28F, 30F	RUL6
Filler Face Plate	NT9X19AA		26	26	07F-32F	RUL6
PB Filler Face Plate	NT9X19BA		26	26	07R-32R	RUL6
Shelf Strip LIS (rear, top)	P0739096			26		AP
Shelf Strip LIS (rear, bot)	P0739095			26		AP
Design.Strip LIS (rear)	P0709179			26		AP
Design.Strip LIS (front, top)	P0739097			26		AP
Shelf Strip LIS (front)	P0739094			26		AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
ENI Shelf Assembly	NT9X0810		1	13		AP
Filler Packfill	NT9X01FB		1	13		RUL7
Bulkhead Assembly (left)	NT9X6520		1	13		RUL7,9
Bulkhead Assembly (right)	NT9X6521		1	13		RUL7,9
Bulkhead Assembly (left)	NT9X6530		1	13		RUL7,9
Bulkhead Assembly (right)	NT9X6531		1	13		RUL7,9
Bulkhead Assembly	NT9X0813		2	13		RUL7,9
Streamline Bulkhead Assembly	NT9X8909		2	13		RUL7,9
DMS SNSE ENI F-Bus Common CP	NTZZ34GA		1	13		RUL8
CCS7 8 Meg LIU (E-DS0A)	NTZZ30UA			13	08F, 30F,	RUL8
CCS7 8 Meg LIU (E/HC-DS0A)	NTZZ30VA			13	08F, 30F,	RUL8
CCS7 8 Meg LIU (V.35)	NTZZ30WA			13	08F, 30F,	RUL8
DMS SNSE ENI Common CP	NTZZ34BA		1	13		RUL9
DMS SNSE 4K ENET	NTZZ34FA		1	13		RUL9
8K Crosspoint CP	NT9X35FA			13	14F-19F, 24F-29F	RUL9
4-Port DS512 Fiber I/F PB	NT9X40BB			13	14R-19R, 24R-29R	RUL9
16-Port DS30 PB	NT9X41BA			13	14R-19R, 24R-29R	RUL9
3-Port DS512 16-Port DS30 PB	NT9X45BA			13	14R-19R, 24R-29R	RUL9
Cable Assembly	NT9X0520			13		RUL9
Cable Assembly	NT9X0524			13		RUL9
Cable Assembly	NT9X0540			13		RUL9
Cable Assembly	NT9X0542			13		RUL9
Cable Assembly (Meridian)	NT9X0815			13		RUL9
Cable Assembly (Meridian)	NT9X0817			13		RUL9
Cable Assy (Streamline, XPM)	NT9X0546			13		RUL9
Cable Assy (Streamline, SLC)	NT9X0544			13		RUL9
Cable Assy (Streamline, XPM)	NT9X0547			13		RUL9
Cable Assy (Streamline, SLC)	NT9X0545			13		RUL9
Design Label (NT9X35FA)	P0735098			13	14F-19F, 24F-29F	RUL12
Design Label (NT9X40BB)	P0734155			13	14R-19R, 24R-29R	RUL12
Design Label (NT9X41BA)	P0704528			13	14R-19R, 24R-29R	RUL12
Design Label (NT9X45BA)	P0731527			13	14R-19R, 24R-29R	RUL12
Shelf Strip, ENI (front)	P0739099		1	13		AP-03
Shelf Strip, ENI (rear, bot)	P0739100		1	13		AP
Shelf Strip, ENI (rear, top)	P0739101		1	13		AP
Design Strip, ENI (front)	P0739102		1	13		AP
Design Strip, ENI (rear)	P0735786		1	13		AP

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EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Cmp Mod Sys Load Mod Sh Assy	NT9X0610		1	00		AP-01
+5V/+12V Power Conv	NT9X91AA		2	00	01F, 36F	AP
+5V/-5V Power Conv	NTDX15AA		2	00	04F, 33F	AP
System Load Module 1A	NT9X44AC		2	00	07F, 28F	AP
CPU Port CP	NT9X12AC		2	00	17F, 22F	AP
Dual Port Msg Controller CP	NT9X86AA		2	00	18F, 21F	AP
CM Processor CP	NT9X13MA		2	00	19F, 20F	RUL10
Des. Labels(NT9X13MA)	P0727357		2	00	19F, 20F	RUL12
CM Processor CP	NT9X13MB		2	00	19F, 20F	RUL10
Des. Labels(NT9X13MB)	P0737298		2	00	19F, 20F	RUL12
Parallel Port Interface PB	NT9X46AA		4	00	07R, 17R 22R, 28R	AP
P-Bus Terminator PB	NT9X21AB		2	00	12R, 27R	AP
2-Link SR512 PB	NT9X62AA		2	00	18R, 21R	AP
RTIF PB	NT9X26AB		2	00	19R, 20R	AP
CM Extension Cable Assembly	NT9X0167		2	00		AP
E/W 2-25 Pin Cable Assembly	NT9X0160		2	00		AP
RS-232C/Curr Loop Cable Assy	NT9X0196		2	00		AP
Cable Assembly	A0379486		8	00		AP
24 Meg Memory CP	NT9X14DB			00	12F-16F, 23F-27F	RUL10
Design Label (NT9X14DB)	P0700802			00	12F-16F, 23F-27F	RUL12
96 Meg Memory CP	NT9X14EA			00	12F-16F, 23F-27F	RUL10
Design Label (NT9X14EA)	P0736863			00	12F-16F, 23F-27F	RUL12
Filler Face Plate	NT9X19AA			00		RUL4
PB Filler Face Plate	NT9X19BA			00		RUL4
ENET/W-CM Bulkhead Assembly	NT9X6552		2	00		RUL7,9
CM/SLM Bulkhead Assembly	NT9X6553		2	00		RUL7,9
CM Design. Strip (rear)	P0735782		1	00		AP-01
CM Design. Strip (rear,bot)	P0739105		1	00		AP-01
Shelf Strip, CM/SLM (rear,t)	P0739106		1	00		AP-01
Design Strip, CM/SLM (front)	P0739107		1	00		AP-01
Cabinet Mechanical Hardware						RUL13
End Panel Assy Kit (Brown)	NTRX07AE		2			RUL13
Frame Fail Lamp (Brown)	NT0X24BT		1			RUL13
Rear Frame Fail Lamp (Brown)	P0674502		1			RUL13
Frame Fail Lamp (Grey)	NT0X24CN		1			RUL13
Rear Frame Fail Lamp (Grey)	P0699441		1			RUL13
End Panel Assy Kit (Grey)	NTRX07AB		2			RUL13

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
E-CORE Frame Supv Panel	NT9X03AA		1	52		RUL13
Cooling Unit (-48V)	NT9X95CU		1			RUL13
Stand-alone Power Cab. kit	NT9X9532		1			RUL14
Horizontal Power Cab.kit	NT9X9531		1			RUL14
EMI Contact Strips	P0714698		2			RUL14
C42 Cabinet Mechanical Assy	NT9X95BA					NOTE1

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase.
Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if
they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufac-
tured and cannot be ordered.

NOTES:

- 11) Refer to NT9X95BA(EMA4-07-001) for additional mechanical
hardware requirements for C42 Cabinet.

RULES:

- AP 1) When PEC NTZZ34AC is ordered, these items are provided.
- AP-01 1) These items are provided with NT9X01MB and are listed here
for reference.
- AP-02 1) These items are provided with NT9X7204 and are listed here
for reference.
- AP-03 1) These items are provided with NT9X0810 and are listed here
for reference.

- RUL1
- 1) If ASUs are provisioned on either the LIS or ENI shelf, provide one (1) NTZZ34CA DMS SuperNode SE MS LIS/ENI Interface.
 - 2) To connect the F-BUS from the MS to the LIS shelf only, provide two (2) NT9X7211 F-BUS Cables (LE) and two (2) NT9X7213 F-BUS Cables (RI).
 - 3) To connect the F-BUS from the MS to the ENI and optional LIS, provide two (2) NT9X7210 F-BUS Cables (LE) and two (2) NT9X7212 F-BUS Cables (RI).
 - 4) If there are no ASUs in the LIS or ENI shelf, there is no need to extend the F-Bus from the MS down to the LIS or ENI shelves, in which case, do not order NTZZ34CA Building Block.
- RUL2
- 1) SuperNode SE supports up to six IOCs when configured for the LEC/IEC markets, and up to eight IOCs in the MTX markets. IOC 0, IOC 1, and 2 mandatory Inter-Message-Links (IML), must always be on slot 10 for plane 0 & slot 29 for plane 1.
 - 2) To provision Message Switch for up to two (2) IOCs, equip slots 10F and 29F with NT9X17AD (4 Port MS Interface card) port cards and 10R and 29R with NT9X23AA (4 Link DS-30 Paddle Boards).
 - 3) To provision Message Switch with more than two (2) IOCs and up to eight (8) IOCs, equip slots 10F and 29F with NT9X17BB (32 Port MS Interface card) port cards and 10R and 29R with NT9X69BA (16 Link DS-30 Paddle Boards).
 - 4) To provision Message Switch with up to three (3) LPPs, without JNET, equip slots 10F,11F and 29F,28F with NT9X17BB (32 Port MS Interface card) port cards and 10R,11R and 29R,28R with NT9X69BA (16 Link DS-30 Paddle Boards).
 - 5) The maximum number of JNET network modules that may be provisioned is seven (7) for LEC/IEC markets, except for MSL applications where the limit is ten (10). To support up to four (4) JNET network modules,without LPP, provision one (1) NTZZ34JA DMS SuperNode SE MS 8xDS30 Interface. To support up to ten (10) JNET network modules, and or up to three (3) LPPs, provision one (1) NTZZ34DA DMS SuperNode SE MS 32xDS30 Interface.
 - 6) Bulkheads MUST ALWAYS be job engineered on the MS shelf.

- 7) For Meridian initials which are not SNSE retrofit, and for non-Cabinetized applications, the NT9X6550 and NT9X6551 Bulkheads can be used, when NT9X23AA PBs are used in slots 10 thru 12 for Plane 0 and in slots 29 thru 27 for Plane 1.
- For non-Cabinetized and Meridian Initials, provision,
 - NT9X0434 DS30 Cable Assemblies for each 9X23AA provisioned.
 - NT9X0520 DS30 Cable Assemblies for each 9X69BA provisioned.
 - two (2) NT9X0475 IML DS30 Cable Assemblies (for overhead)

(OR)

- two (2) NT9X0433 IML DS30 Cable Assemblies(for raised floor)

Note that NT9X0434 cables are to be used only with NT9X23AA.

- 8) NT9X6560 and NT9X6561 bulkheads can be used when NT9X23AA PBs are used in slots 10 thru 14 for Plane 0 and in slots 29 thru 25 for Plane 1 for existing Meridian offices. Note that NT9X69BA cannot be used with NT9X6560 and 6561 bulkheads.
- For Existing Meridian applications, provision
 - one (1) NT9X0478 IML IOC0 Cable Assembly(right)
 - one (1) NT9X0479 IML IOC1 Cable Assemblies(left)
 - NT9X0474 DS30 Cable Assembly for each 9X23AA provisioned in slots 11 thru 14 for Plane 0 and in slots 28 thru 25 for Plane 1, only for IOCs.
 - NT9X0182 DS30 Cable Assemblies for each pair of 23AAs provisioned in slots 11 thru 14 for Plane 0 and in slots 28 thru 25 for Plane 1.
- 9) NT9X6567 and NT9X6568 bulkheads can be used when NT9X23AA/69BA PBs are used for Cabinetized(streamline) offices. Provision one (1) NTEX5070 cover plate for each unused cable positions in NT9X6567 and NT9X6558 bulkheads.
- For Streamline application provision,
 - one (1) NT9X6544 IML IOC0 Cable Assembly for 23AA in slot 10 for Plane 0.
 - one (1) NT9X6544 IML IOC1 Cable Assembly for 23AA in slot 29 for Plane 1.

(OR)

- one (1) NT9X0483 14 port Cable Assembly for 69BA in slot 10R for Plane 0.
- one (1) NT9X0487 6 port Cable Assembly for 69BA in slot 11R for Plane 0.
- one (1) NT9X0483 14 port Cable Assembly for 69BA in slot 29R for Plane 1.
- one (1) NT9X0487 6 port Cable Assembly for 69BA in slot 28R for Plane 1.

AND

- two (2) NT9X0489 IML DS30 Cable Assemblies (for overhead)
- two (2) NT9X0488 IML DS30 Cable Assemblies (for raised floor)

Note that JNET is NOT supported with SNSE in streamline application.

Connectors C0-C3;D0-D3;and E0-E3 in the NT9X6567/68 BHs are used for LPP 0, 1 and 2 respectively.

RUL3 1) Message Switch Configurations

The range of port cards and paddle boards that are supported by the SuperNode SE allows it to be configured with up to 8 Input/Output Controllers (IOC), 2 mandatory Inter-Message-Links (IML), upto 3 Link Peripheral Processors (LPP), and either a fully equipped 16K channel Enhanced Network (ENET) or upto 7 junctored Network Modules (JNET/NMs). Note that MSL Cabinet packaged systems can support upto 10 NMs. Where ENET 16K is used, the message switch also provides two slots for interfaces to Application/File Processors(AP/FP) and or Single Shelf LPPs (SSLPP or FLIS) external to the SNSE cabinet.

To Provision Message Switch for internal LIS interface, equip slots 8F and 31F with NT9X73BA(Rate Adapter CP) and 8R and 31R with NT9X79BA, F-Bus Extender Paddle Board.

		ENET	ENET	JNET	JNET
	MS SLOTS	MS P-side ports < than or equal to 128	MS P-side ports > than 128 but < than 256	1 - 4 Network Modules	5 - 7 Net. Mod. OR 10NMs for MSL appl.
2 IMLs 2 IOCs & 0 LPP & 1 FLIS	10 & 29 11 & 28 12 & 27 13 & 26 14 & 25 15 & 24	17AD/23AA 17AD/62BA *17DA/62CA 17DA/62CA	17AD/23AA 17AD/62BA 17CA/62CA 17CA/62CA	17AD/23AA 17AD/23AA 17AD/23AA 17AD/62BA	17AD/23AA 17BB/69BA 17BB/69BA 17AD/62BA
2 IMLs upto 8 IOcs & 0 LPPs	10 & 29 11 & 28 12 & 27 13 & 26 14 & 25 15 & 24	17BB/69BA *17DA/62CA 17DA/62CA	17BB/69BA 17CA/62CA 17CA/62CA	17BB/69BA 17AD/23AA 17AD/23AA	17BB/69BA 17BB/69BA 17BB/69BA
2 IMLs upto 8 IOcs & 3 LPPs	10 & 29 11 & 28 12 & 27 13 & 26 14 & 25 15 & 24	17BB/69BA 17BB/69BA *17DA/62CA 17DA/62CA	17BB/69BA 17BB/69BA 17CA/62CA 17CA/62CA	17BB/69BA 17BB/69BA 17BB/69BA	17BB/69BA 17BB/69BA 17BB/69BA

Note that the SuperNode SE can support either ENET or JNET configurations. It cannot support mixed ENET and JNET configurations, because JNET cannot interwork with ENET. Note that JNET is NOT supported with SNSE in streamline application.

* See the next table.

- 2) Use the following table to provide the circuit packs necessary for the required maximum number of MS and ENET ports. Note that the single MS port card configuration for ENET are recommended at initial office deployment, and two card configurations for subsequent growth.

The ENET interface provisioning is determined by the number of peripheral message channels required per ENET plane and is shown below.

P-side ports/ MS Plane	P-Side Peripheral Msg channels per ENET Pl.	slot 15 & 24		slot 14 & 25	
		Front Front	Rear Rear	Front Front	Rear Rear
				-	-
64	< or = 31	17DA	62CA	-	-
				-	-
128	< or = 63	17DA *17CA	62CA OR 62CA	17DA -	62CA -
256	< or = 127	*17CA	62CA	*17CA	62CA

The circuit pack fill order is:

- 1) 15F/R (MS 0) and 24F/R (MS 1),
- 2) 14F/R (MS 0) and 25F/R (MS 1).

* The NT9X17CA is a 128 port card that is available in BCS35 for Verification Offices(VOs) and ramp offices. The circuit pack will attain General Availability(GA) in BCS36.

If the number of message channels required for interfacing with ENET is less than or equal to 31, Provision one (1) NT9X17DA in slot 15.

If the number of message channels required for interfacing with ENET is less than or equal to 63, provide the NT9X17DA MS 64-Port CPs in two consecutive slots or one (1) NT9X17CA in slot 15.

If the number of message channels required for interfacing with ENET is less than or equal to 127, provide NT9X17CA MS 128-Port CPs in two consecutive slots. Note that NT9X62CA must always be provisioned in slots 15R and 14R for ALL scenario.

3) SR512 Ports

Slots 13 and 26 are always available for additional functionality (That is AP/FP/SSLPP).

To add FLIS provide, two (2) NT9X17AD and two (2) NT9X62BA. To add AP/FP provide, two (2) NT9X17DA and two (2) NT9X62BA.

- RUL4 1) Provision NT9X19AA Filler Face Plates and NT9X19BA Paddleboard Filler Face Plates for all unoccupied slots.

- RUL5 1) Provide one (1) NTZZ34EA DMS SNSE LIS Common CP in shelf position 26 if LIUs are to be provisioned.

If LIUs are equipped on the LIS and ENI shelves, provide:
two (2) NT9X79AA F-Bus Extender Paddleboards and,
two (2) NT9X79AA Des. Labels (P0689621).
These items extend the F-Bus on to the ENI shelf.

If LIUs are equipped on the LIS shelf only, provide:
two (2) NT9X79BA F-Bus Extender with BUS Termination PBs
two (2) NT9X79BA Des. Labels (P0689622).
The NT9X79BA terminate the F-Bus on the LIS shelf.

Provision one (1) NTEX5025 Cover Plate for each unused cable position on the NT9X6534 Bulkhead Assemblies. There are a total of 32 cable connector positions on the bulkheads, 16 on each side.

- 2) If ASU functionality is not required on the LIS shelf, provide one (1) NT9X01FB Filler Packfill and thirty-two (32) NTEX5025 Cover Plates. Note that the NT9X6534 BH is always provided with NTZZ34AC.

Bulkheads MUST ALWAYS be equipped on the LIS shelf, even if fillers are the only packs shipped with the SuperNode SE cabinet.

The NT9X01FB filler packfill contains:

- four (4) NT9X19CA Power Filler Face Plates,
- two (2) NT9X0314 FSP Shorting Plugs (B0225296),
- twenty-six (26) NT9X19AA Filler Face Plates and
- twenty-six (26) NT9X19BA Paddleboard Filler Face Plates,

- RUL6 1) A total of up to twelve (12) LIUs may be provisioned on the LIS. Provision any combination of:
NTZZ30UA CCS7 8 Meg LIU (E-DS0A)
NTZZ30VA CCS7 8 Meg LIU (E/HC-DS0A)
NTZZ30WA CCS7 8 Meg LIU (V.35)

- 2) Provide NT9X19AA Front Filler circuit packs and NT9X19BA Rear Filler paddleboards for all unequipped slots in the LIS shelf.

- RUL7 1) If ENET or LIU functionality is not required in the ENI shelf, and the cabinet is to be shipped with an empty ENI Shelf Assembly, provide one (1) NT9X01FB Filler Packfill, two (2) ENI bulkheads, and two (2) NT9X6553 CM/SLM bulkheads.

The NT9X01FB filler packfill contains:

- four (4) NT9X19CA Power Filler Face Plates,
- two (2) NT9X0314 FSP Shorting Plugs (B0225296),
- twenty-six (26) NT9X19AA Filler Face Plates and
- twenty-six (26) NT9X19BA Paddleboard Filler Face Plates,

Bulkheads MUST ALWAYS be provided on the ENI shelf, even if fillers are the only packs shipped in the ENI shelf.

Bulkheads MUST ALWAYS be provided on the CM/SLM shelf.

- 2) The ENI and CM/SLM bulkheads are provisioned as follows:

BULKHEAD PROVISIONING

The ENI bulkheads have different connectors for non-Cabinetized, Meridian as well as Streamline applications. The bulkhead NT9X6553 is the common CM/SLM bulkhead for Standard, Meridian and Streamline applications.

The NT9X6520/21 pair always requires the NT9X6553 CM/SLM bulkhead for 1 to 48 DS30 links. The NT9X6520/21 pair always requires the NT9X6552 CM/SLM bulkhead for 49 to 96 DS30 links.

Choose one of the bulkhead options listed below:

For standard applications without an SLC, with up to 48 DS30 links provision:

- one (1) NT9X6520 ENI Bulkhead Assembly (left),
- one (1) NT9X6521 ENI Bulkhead Assembly (right) and
- two (2) NT9X6553 CM/SLM Bulkhead Assemblies.

The NT9X6553 CM/SLM bulkheads have no DS30 connection capability.

For standard applications without an SLC, with more than 48 DS30 links, but less than or equal to 96 DS30 links provision:

- one (1) NT9X6520 ENI Bulkhead Assembly (left),
- one (1) NT9X6521 ENI Bulkhead Assembly (right) and
- two (2) NT9X6552 CM/SLM Bulkhead Assemblies

The NT9X6552 CM/SLM bulkheads have extra DS-30 connection capacity.

For standard applications with an SLC, and with more than 48 DS30 links, but less than or equal to 112 DS30 links provision:

one (1) NT9X6530 ENI Bulkhead Assembly (left),
one (1) NT9X6531 ENI Bulkhead Assembly (right) and
two (2) NT9X6553 CM/SLM Bulkhead Assemblies.

The CM bulkhead is required when the DS-30 channel capacity exceeds 48 DS-30s per ENET plane, without an SLC. Forty-eight DS-30s is the maximum connection capacity of a single NT9X6520/21 ENI bulkhead.

- 3) For Meridian applications, provision:
 - two (2) NT9X0813 Bulkhead Assemblies and
 - two (2) NT9X6553 CM/SLM Bulkhead Assemblies.
- 4) For Streamline applications, provision:
 - two (2) NT9X8909 Streamline Bulkhead Assemblies and
 - two (2) NT9X6553 CM/SLM Bulkhead Assemblies.

Note that, when using NT9X8909 ENI Bulkhead with Cabinetized TME without an SLC, only up to a maximum of 14 8-DS30 cables can be used.

- RUL8
- 1) If LIU functionality is required on the ENI shelf, and ENET has been provided, provision one (1) NTZZ34GA DMS SNSE ENI F-Bus Common CP.
 - 2) Provision any combination of:
 - NTZZ30UA CCS7 8 Meg LIU (E-DS0A),
 - NTZZ30VA CCS7 8 Meg LIU (E/HC-DS0A),
 - NTZZ30WA CCS7 8 Meg LIU (V.35)as required.

Note:

A total of up to two (2) LIUs may be provisioned on the ENI shelf.

The ENI shelf cannot support LIUs without the provisioning of an ENET. The reason for this restriction is that the ENET processor circuit packs control the power lock-out for the ENI shelf. If there are no ENET processor packs, there is no power supplied to the ENI shelf.

- RUL9
- 1) The minimum allowable ENET configuration is 4K, with 2K of the initial 4K channels assigned for messaging between the MS and the ENET. The ENET on SuperNode SE is only available in 4K, 8K, 12K and 16K configurations.

- 2) For a 4K ENET, provision one (1) NTZZ34FA DMS SNSE 4K ENET, one (1) NTZZ34BA DMS SNSE ENI Common CP and see item 6) below for cable provisioning requirements.

Provide front fillers (NT9X19AA) and paddleboard fillers (NT9X19BA) for all unprovisioned slots. All slots must be filled to ensure proper air flow for cooling.

- 3) For an 8K ENET, provision one (1) NTZZ34FA DMS SNSE 4K ENET, one (1) NTZZ34BA DMS SNSE ENI Common CP and four (4) NT9X35FA 8K Crosspoint Circuit Packs in slots 14F, 15F for Plane 0, and 24F and 25F for Plane 1.

Also provision any combination of NT9X40BB 4-Port DS512 Fiber Interface Paddleboards, NT9X41BA 16-Port DS30 Paddleboards and NT9X45BA 3-Port DS512 + 16-Port DS30 Paddleboards in slots 14R, 15R, 24R and 25R, provided that slots 14R and 24R have matching paddleboards and slots 15R and 25R also have matching paddleboards.

Also, see 6) below for cable provisioning requirements. Provide front fillers (NT9X19AA) and paddleboard fillers (NT9X19BA) for all unprovisioned slots. All slots must be filled to ensure proper air flow for cooling.

- 4) For a 12K ENET, provision one (1) NTZZ34FA DMS SNSE 4K ENET, one (1) NTZZ34BA DMS SNSE ENI Common CP, and eight (8) NT9X35FA 8K Crosspoint Circuit Packs in slots 14F to 17F for Plane 0 and 24F to 27F for Plane 1.

Also provision any combination of NT9X40BB 4 Port DS512 Fiber Interface Paddleboards, NT9X41BA 16-Port DS30 Paddleboards and NT9X45BA 3-Port DS512 16-Port DS30 Paddleboards in slots 14R to 17R and 24R to 27R, providing that matching paddleboards are used in each of the following pairs of slots:

14R and 24R; 15R and 25R;
16R and 26R; 17R and 27R.

The total number of NT9X41BA and NT9X45BA Paddleboards may not exceed four (4) per ENET plane for Meridian applications.

Also, see 6) below for cable provisioning requirements. Provide front fillers (NT9X19AA) and paddleboard fillers (NT9X19BA) for all unprovisioned slots. All slots must be filled to ensure proper air flow for cooling.

- 5) For a 16K ENET, provision one (1) NTZZ34FA DMS SNSE 4K ENET, one (1) NTZZ34BA DMS SNSE ENI Common CP and twelve

(12) NT9X35FA 8K Crosspoint Circuit Packs in slots 14F to 19F and 24F to 29F.

Also provision any combination of NT9X40BB 4-Port DS512 Fiber Interface Paddleboards, NT9X41BA 16-Port DS30 Paddleboards and NT9X45BA 3-Port DS512 16-Port DS30 Paddleboards in slots 14R to 19R and 24R to 29R, provided that matching paddleboards are used in each of the following pair of slots:

14R and 24R; 15R and 25R;
16R and 26R; 17R and 27R;
18R and 28R; 19R and 29R.

The total number of DS30 ports provided by the NT9X41BA and NT9X45BA Paddleboards may not exceed ninety-six (96) per ENET plane due to the limit of bulkhead cable connectors available to terminate DS30 links.

The total number of NT9X41BA and NT9X45BA Paddleboards may not exceed four (4) per ENET plane for Meridian applications.

The paddleboards in slots 19R and 29R can not be used for DS30 links if NT9X6520 and 6521 bulkheads are provisioned.

Also, see 6) below for cable provisioning requirements. Provide front fillers (NT9X19AA) and paddleboard fillers (NT9X19BA) for all unprovisioned slots. All slots must be filled to ensure proper air flow for cooling.

6) For Standard applications, provision:

one (1) NT9X0520 Cable Assembly per NT9X41BA and
one (1) NT9X0524 Cable Assembly per NT9X45BA
(if the NT9X41BA or NT9X45BA is in slot 17R or 18R and requires DS30 connections to the CM bulkhead in position 00, use NT9X0540 instead of NT9X0520 and NT9X0542 instead of NT9X0524).

for Meridian applications, provision:

one (1) NT9X0815 Cable Assembly per NT9X41BA and
one (1) NT9X0817 Cable Assembly per NT9X45BA.
for up to 64 DS-30s.

For Streamline applications, provision:

one (1) NT9X0546 Cable Assembly per NT9X41BA and
one (1) NT9X0547 Cable Assembly per NT9X45BA
(when an SLC is provided, use NT9X0544 instead of NT9X0546 and use NT9X0545 instead of NT9X0547).

Both of the above cabling scenarios for Streamline allow the termination of up to 112 DS-30 links.

Note:

The NT9X40BB only has fiber ports and fiber cables do not terminate on the bulkhead. The cables from this paddleboard go through a hole in the bulkhead and connect directly to the fiberized peripheral.

7) BULKHEAD PROVISIONING

The ENI bulkheads have different connectors for Standard, Meridian as well as Streamline applications. The bulkhead NT9X6553 is the common CM/SLM bulkhead for Standard, Meridian and Streamline applications.

The NT9X6520/21 pair always requires the NT9X6553 CM/SLM bulkhead for 1 to 48 DS30 links. The NT9X6520/21 pair always requires the NT9X6552 CM/SLM bulkhead for 49 to 96 DS30 links.

The ENI and CM/SLM bulkheads are provisioned as follows:
Choose one of the bulkhead options listed below:

For standard applications without an SLC, with up to 48 DS30 links provision:

one (1) NT9X6520 ENI Bulkhead Assembly (left),
one (1) NT9X6521 ENI Bulkhead Assembly (right) and
two (2) NT9X6553 CM/SLM Bulkhead Assemblies.

The NT9X6553 CM/SLM bulkheads have no DS30 connection capability.

For standard applications without an SLC, with more than 48 DS30 links, but less than or equal to 96 DS30 links provision:

one (1) NT9X6520 ENI Bulkhead Assembly (left),
one (1) NT9X6521 ENI Bulkhead Assembly (right) and
two (2) NT9X6552 CM/SLM Bulkhead Assemblies

The NT9X6552 CM/SLM bulkheads have extra DS-30 connection capacity.

For standard applications with an SLC, and with more than 48 DS30 links, but less than or equal to 112 DS30 links provision:

one (1) NT9X6530 ENI Bulkhead Assembly (left),
one (1) NT9X6531 ENI Bulkhead Assembly (right) and
two (2) NT9X6553 CM/SLM Bulkhead Assemblies.

The CM bulkhead is required when the DS-30 channel capacity exceeds 48 DS-30s per ENET plane, without an SLC. Forty-eight DS-30s is the maximum connection capacity of a single NT9X6520/21 ENI bulkhead.

RUL10 1) Deleted.

- 2) For new jobs at BCS35 and higher, provide the NT9X13MB processor circuit boards. The NT9X13MB Processor provides ability to function with either NT9X14EA (96 Meg memory) or NT9X14DB (24 Meg memory), but not both. That is NT9X14DB and NT9X14EA WILL NOT be supported in a mixed configuration. Check availability prior to ordering NT9X14EA.

Existing SNSE offices equipped with NT9X13MA requiring 96Meg memory upgrade are not required to order NT9X13MB by System Application Engineer. The NT9X13MBs can be obtained through "CSO" upgrade procedure for Candian market and "88K and Warranty Manager" ordering process for U.S market.

The 96 Meg memory cards are the recommended option on SNSE initials from BCS35 onwards. The 24 Meg memory will only be available on SNSE extensions.

The NT9X14EA memory boards have the capability to function in burst mode. Burst mode memory is required to fully utilize the Series 60 BRISC processor (BRISC not available until BCS36). The new RTIF NT9X26DB will have to be provisioned with this BRISC processor.

- 3) The NT9X14DB 24Mb circuit boards are to be provided for memory extensions of existing offices at BCS34. Note that 24Mb circuit boards do not function in burst mode.
- 4) Provision memory circuit packs in pairs, in slots in the following order:
- 1) 16F and 23F;
 - 2) 15F and 24F;
 - 3) 14F and 25F;
 - 4) 13F and 26F;
 - 5) 12F and 27F.

The number of pairs to be provisioned depends on the memory requirement for the office.

RUL11 Deleted

RUL12 1) Provide designation labels as required.

RUL13 1) Provide mechanical hardware for the S/DMS cabinet, such as end guards, frame isolating pads and anchors by using the Engineering Manual inserts:

NT9X95BA - Mechanical Hardware for S/DMS Cabinet,
NTRX73 - Cabinetized DMS Cosmetic Endguards
and EMI Sidepanels.

- 2) Provision two (2) NTRX07AB End Panel Assy Kits (Grey), one (1) NT0X24CN Frame Fail Lamp (Grey) and one (1) P0699441 Rear Frame Fail Lamp for grey cabinets.
OR

- 3) Provision two (2) NTRX07AE End Panel Assy Kits (Brown), one (1) NT0X24BT Frame Fail Lamp (Brown) and one (1) P0674502 Rear Frame Fail Lamp for brown cabinets.

- 4) For offices with -48 volt power convertors, provide one (1) Cooling Unit (-48V) (NT9X95CU) and one (1) E-CORE Frame Supv Panel (NT9X03AA).

- RUL14 1) Provide one (1) NT9X9532 stand-alone Cabling Interface Kit when powering the NT9X01MB cabinet from the 7 foot PDC frame OR powering from the new CPDC (NTRX31CA) cabinet, OR powering from the NTRX31AA or from the NTRX31BA CPDC cabinet which is in the different lineup than the NT9X01MB. Also use this kit when powering from the MPDC Meridian cabinet. This kit includes cables, filters, and miscellaneous mounting hardware.

The NT9X9532 is used in non-streamline (non-cabinetized) application.

Twenty-two (22) white boots are included in the NT9X9532 stand-alone Cabling Interface Kit.

Note: The twenty-two white boots MUST NOT be installed on the manufacturing shop floor. The boots must be shipped seperately (loose) and installed at the job site.

- 2) Provide one (1) NT9X9531 Horizontal Power Cabling Interface Kit when powering the NT9X01MB cabinet from the NTRX31AA or from the NTRX31BA CPDC cabinet which is in the same lineup as the NT9X01MB. Also use this kit when powering from the MCAM Meridian frame. This kit includes power cables, terminal blocks, and miscellaneous mounting hardware.

The NT9X9531 is used in streamline(cabinetized) application.

Always provide:

two (2) EMI contact strips (P0714698)

when providing the NT9X9531 Horizontal Power Cabling Interface Kit.

DMS SUPERNODE SE COMBINED CABINET: (-60V)

PEC CODE: NTZZ34MB

CPC CODE: B0239185

| RATING: Manufacture Discontinued

REPLACES: NTZZ34MA

| REPLACED BY: NTZZ34MC

ABBREVIATION NAME: SCC

ENGINEERING DESCRIPTION: The SuperNode SE houses a Computing Module (CM), a System Load Module 1A (SLM1A), a Message Switch (MS), an Enhanced Network (ENET) and a Link Interface Shelf (LIS).

The NTZZ34MA Building Block is for applications for markets that utilize -60V power.

REFERENCE DOCUMENTATION: SL9X01MB 00 08
MS9X01MB 01 09
SLZZ34MB 00 02
NTZZ34MB REL 02

MARKETS: Applicable markets:

Europe

ISSUE AUTHOR: NTI: Jerry Palmer Dept. 3471 (PPK)

MAIN CONTACT: NTI: Jerry Palmer Dept. 3471 (PPK)

NTZZ34MB EMC4-06-005 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 08 10	ECM 632 06	NTZZ34MA became MD and replaced by NTZZ34MB. In NTZZ34MB the FSP and CU for -60V are always provided. Also 24 Meg memory is not an option in 34MB
93 12 21	ECM 632 07	Correct SLZZ34MB stocklist to have 2 NT9X26AB. Introduction of NT9X0183 and NT9X0187 cables for cabinetized BHs 9X6567/68. Cables must be used with NT9X69BA cps. Changes to item 9 of RUL2. NT9X62CA must always be used. DO NOT use NT9X25BA in MS for ENET appl..
94 02 23	ECM 632 08	To show issue 07 update in CODA. Also modify RUL2 item 7.
94 03 10	ECM 632 09	Replace the NT9X95AA with the NT9X95BA. (ECD: 018-41431)
94 06 16	ECM 632 10	Retire Section.

The DMS SuperNode SE Combined Cabinet: (-60V) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
DMS SuperNode SE Core Cabnt	NT9X01MB		1			AP
Message Switch Shelf Assy	NT9X0470		1	39		AP-01
Global -5V, 20A Pow. Conv.	NT9X31AB		2	39	01F, 33F	AP
Global +5V, 86A Pow. Conv.	NT9X30AB		2	39	04F, 36F	AP
T-Bus Terminator CP	NT9X49CC		2	39	07F, 32F	AP
Mapper CP	NT9X15AA		2	39	09F, 30F	AP
4-Port MS I/F CP	NT9X17AD		2	39	10F, 29F	RUL2
32-Port MS I/F CP	NT9X17BB		2	39	10F, 29F	RUL2
4-Port MS I/F CP	NT9X17AD		2	39	16F, 23F	AP
MS Processor CP	NT9X13NA		2	39	17F, 22F	AP
Combined Clock CP	NT9X53AC		2	39	18F, 21F	AP
T-Bus Access CP	NT9X52AA		2	39	19F, 20F	AP
4-Link DS30 PB	NT9X23AA		2	39	10R, 29R	RUL2
16-Link DS30 PB	NT9X69BA		2	39	10R, 29R	RUL2
32-Port MS I/F CP	NT9X17BB		2	39	11F, 28F	RUL2
(for upto 3 LPPs, no JNET)						
16-Link DS30 PB	NT9X69BA		2	39	11R, 28R	RUL2
(for upto 3 LPPs, no JNET)						
DMS SNSE MS LIS/ENI I/F	NTZZ34CA		1	39		RUL1
F-BUS Cab Assy 3-shelf (LE)	NT9X7210		2	39		RUL1
F-BUS Cab Assy 3-shelf (RI)	NT9X7212		2	39		RUL1
F-BUS Cab Assy 2-shelf (LE)	NT9X7211		2	39		RUL1
F-BUS Cab Assy 2-shelf (RI)	NT9X7213		2	39		RUL1
DMS SNSE MS 8xDS30 I/F	NTZZ34JA		1	39		RUL2
DMS SNSE MS 32xDS30 I/F	NTZZ34DA		1	39		RUL2
MS Bulkhead Assembly (left)	NT9X6550		1	39		RUL2
(for non-Cab & Mer. Initial)						
MS Bulkhead Assembly (right)	NT9X6551		1	39		RUL2
(for non-Cab & Mer. Initial)						
DS30 Cable Assembly	NT9X0434			39		RUL2
(For non-Cabinetized appl.)						
DS30 Cable Assembly	NT9X0520			39		RUL2
(with 69BA for non-Cab appl)						
DS30 IML DS30 Cable Ass.	NT9X0475		2	39		RUL2
(Overhead appl.)						
DS30 IML DS30 Cable Ass.	NT9X0433		2	39		RUL2
(Raised Floor appl.)						
MS Bulkhead Assembly (left)	NT9X6560		1	39		RUL2
(Existing Meridian appl.)						
MS Bulkhead Assembly (right)	NT9X6561		1	39		RUL2
(Existing Meridian appl.)						
IML IOC0 Cable Assembly	NT9X0478		1	39		RUL2
(Existing Meridian appl.)						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
IML IOC1 Cable Assembly (Existing Meridian appl.)	NT9X0479		1	39		RUL2
DS30 Cable Assembly (with 23AA for exi. Mer.)	NT9X0474			39		RUL2
DS30 Cable Assembly (23AA in pairs, exi. Mer.)	NT9X0182			39		RUL2
Cabinetized Bulkhead (left) (Streamline Application)	NT9X6567		1	39		RUL2
Cabinetized Bulkhead (right) (Streamline Application)	NT9X6568		1	39		RUL2
DS30 IML DS30 Cable Ass. (Cab.appl., Overhead appl.)	NT9X0489		2	39		RUL2
14 port DS30 cable assembly	NT9X0483			39		RUL2
6 port DS30 cable assembly	NT9X0487			39		RUL2
DS30 IML DS30 Cable Ass. (Cab.appl., Raised Flr. appl.)	NT9X0488		2	39		RUL2
IML IOC0 Cable Assembly (Cabinetized Application)	NT9X6544		1	39		RUL2
IML IOC1 Cable Assembly (Cabinetized Application)	NT9X6544		1	39		RUL2
Bulkhead Cover Plate	NTEX5070			39		RUL2
4-Port MS I/F CP	NT9X17AD		2	39	13F, 26F	RUL3
SR-512 Fiber Paddle Board	NT9X62BA		2	39	13R, 26R	RUL3
32-Port MS I/F CP	NT9X17BB		2	39	15F, 24F 14F, 25F	RUL3
DMS Bus 64 Port CP	NT9X17DA			39	15F, 24F 14F, 25F	RUL3
DMS Bus 128 Port CP	NT9X17CA			39	15F, 24F 14F, 25F	RUL3
2-Link SR512 PB	NT9X62CA			39	15R, 24R	RUL3
2-Link SR512 PB	NT9X62CA			39	14R, 25R	RUL3
2-Link SR512 PB	NT9X62CA		2	39	16R, 23R	AP
RTIF PB	NT9X26AB		2	39	17R, 22R	AP
Clock Interface PB	NT9X54AC		2	39	18R, 21R	AP
MS Clock Cable Assembly	NT9X0436		1	39		AP
MS Clock Cable Assembly	NT9X0437		1	39		AP
Cable Assembly	NT9X0438		4	39		AP
MS0-MS1 Cable Assembly	NTEX5026		1	39		AP
Filler Face Plate	NT9X19AA			39		RUL4
PB Filler Face Plate	NT9X19BA			39		RUL4
Design Label (NT9X17AD)	P0735096			39	10F, 29F	RUL12
Design Label (NT9X23AA)	P0678443			39	10R, 29R	RUL12
Design Label (NT9X17BB)	P0726962			39	10F, 29F	RUL12
Design Label (NT9X69BA)	P0726964			39	10R, 29R	RUL12
Design Label (NT9X17BB)	P0726962			39	15F, 24F 14F, 25F	RUL12

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Design Label (NT9X17DA)	P0707891			39	15F, 24F	RUL12
Design Label (NT9X17CA)	P0678441			39	14F, 25F	RUL12
Design Label (NT9X62CA)	P0735105			39	15F, 24F	RUL12
Shelf Strip, MS (rear, top)	P0739091		1	39	14F, 25F	AP-01
Shelf Strip, MS (rear, bot)	P0739090		1	39	14R, 25R,	AP-01
MS Design. Strip (front)	P0739092		1	39	15R, 24R	AP-01
MS Design. Strip (rear)	P0735784		1	39		AP-01

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Link Interface Shelf Assy	NT9X7204		1	26		AP
DMS SNSE LIS Common CP	NTZZ34LA		1	26	01F	RUL5
Filler Packfill	NT9X01FB		1	26		RUL5
Bulkhead Assembly	NT9X6534		2	26		RUL5
Cover Plate	NTEX5025		32	26		RUL5
F-Bus Extender PB	NT9X79AA		2	26	07R, 32R	RUL5
Design Label (NT9X79AA)	P0689621		2	26	07F, 32F	RUL5
F-Bus Ext with Term. PB	NT9X79BA		2	26	07R, 32R	RUL5
Design Label (NT9X79BA)	P0689622		2	26	07F, 32F	RUL5
CCS7 8 Meg LIU (E-DS0A)	NTZZ30UA			26	08F, 10F, 12F, 14F, 16F, 18F, 20F, 22F, 24F, 26F, 28F, 30F	RUL6
CCS7 8 Meg LIU (E/HC-DS0A)	NTZZ30VA			26	08F, 10F, 12F, 14F, 16F, 18F, 20F, 22F, 24F, 26F, 28F, 30F	RUL6
CCS7 8 Meg LIU (V.35)	NTZZ30WA			26	08F, 10F, 12F, 14F, 16F, 18F, 20F, 22F, 24F, 26F, 28F, 30F	RUL6
Filler Face Plate	NT9X19AA		26	26	07F-32F	RUL6
PB Filler Face Plate	NT9X19BA		26	26	07R-32R	RUL6
Shelf Strip LIS (rear, top)	P0739096			26		AP
Shelf Strip LIS (rear, bot)	P0739095			26		AP
Design.Strip LIS (front,top)	P0739097			26		AP
Shelf Strip LIS (front)	P0739094			26		AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
ENI Shelf Assembly	NT9X0810		1	13		AP
Filler Packfill	NT9X01FB		1	13		RUL7
Bulkhead Assembly (left)	NT9X6520		1	13		RUL7,9
Bulkhead Assembly (right)	NT9X6521		1	13		RUL7,9
Bulkhead Assembly (left)	NT9X6530		1	13		RUL7,9
Bulkhead Assembly (right)	NT9X6531		1	13		RUL7,9
Bulkhead Assembly	NT9X0813		2	13		RUL7,9
Streamline Bulkhead Assembly	NT9X8909		2	13		RUL7,9
DMS SNSE ENI F-Bus Common CP	NTZZ34GA		1	13		RUL8
CCS7 8 Meg LIU (E-DS0A)	NTZZ30UA			13	08F, 30F,	RUL8
CCS7 8 Meg LIU (E/HC-DS0A)	NTZZ30VA			13	08F, 30F,	RUL8
CCS7 8 Meg LIU (V.35)	NTZZ30WA			13	08F, 30F,	RUL8
DMS SNSE ENI Common CP	NTZZ34KA		1	13		RUL9
DMS SNSE 4K ENET	NTZZ34FA		1	13		RUL9
8K Crosspoint CP	NT9X35FA			13	14F-19F, 24F-29F	RUL9
4-Port DS512 Fiber I/F PB	NT9X40BB			13	14R-19R, 24R-29R	RUL9
16-Port DS30 PB	NT9X41BA			13	14R-19R, 24R-29R	RUL9
3-Port DS512 16-Port DS30 PB	NT9X45BA			13	14R-19R, 24R-29R	RUL9
Cable Assembly	NT9X0520			13		RUL9
Cable Assembly	NT9X0524			13		RUL9
Cable Assembly	NT9X0540			13		RUL9
Cable Assembly	NT9X0542			13		RUL9
Cable Assembly (Meridian)	NT9X0815			13		RUL9
Cable Assembly (Meridian)	NT9X0817			13		RUL9
Cable Assy (Streamline, XPM)	NT9X0546			13		RUL9
Cable Assy (Streamline, SLC)	NT9X0544			13		RUL9
Cable Assy (Streamline, XPM)	NT9X0547			13		RUL9
Cable Assy (Streamline, SLC)	NT9X0545			13		RUL9
Design Label (NT9X35FA)	P0735098			13	14F-19F, 24F-29F	RUL12
Design Label (NT9X40BB)	P0734155			13	14R-19R, 24R-29R	RUL12
Design Label (NT9X41BA)	P0704528			13	14R-19R, 24R-29R	RUL12
Design Label (NT9X45BA)	P0731527			13	14R-19R, 24R-29R	RUL12
Shelf Strip, ENI (front)	P0739099		1	13		AP-03
Shelf Strip, ENI (rear, bot)	P0739100		1	13		AP
Shelf Strip, ENI (rear, top)	P0739101		1	13		AP
Design Strip, ENI (front)	P0739102		1	13		AP
Design Strip, ENI (rear)	P0735786		1	13		AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Cmp Mod Sys Load Mod Sh Assy	NT9X0610		1	00		AP-01
+5V/+12V Power Conv	NT9X91AB		2	00	01F, 36F	AP
+5V/-5V Power Conv	NTDX15AB		2	00	04F, 33F	AP
System Load Module 1A	NT9X44AC		2	00	07F, 28F	AP
CPU Port CP	NT9X12AC		2	00	17F, 22F	AP
Dual Port Msg Controller CP	NT9X86AA		2	00	18F, 21F	AP
CM Processor CP	NT9X13MB		2	00	19F, 20F	RUL10
Des. Labels(NT9X13MB)	P0737298		2	00	19F, 20F	RUL12
BRISC Processor CP	NT9X10AA		2	00	19F, 20F	RUL10
Des. Labels(NT9X10AA)	P0734152		2	00	19F, 20F	RUL12
Parallel Port Interface PB	NT9X46AA		4	00	07R, 17R	AP
					22R, 28R	
P-Bus Terminator PB	NT9X21AB		2	00	12R, 27R	AP
2-Link SR512 PB	NT9X62AA		2	00	18R, 21R	AP
RTIF PB for NT9X13MB	NT9X26AB		2	00	19R, 20R	RUL10
RTIF PB for BRISC	NT9X26DB		2	00	19R, 20R	RUL10
CM Extension Cable Assembly	NT9X0167		2	00		AP
E/W 2-25 Pin Cable Assembly	NT9X0160		2	00		AP
RS-232C/Curr Loop Cable Assy	NT9X0196		2	00		AP
Cable Assembly	A0379486		8	00		AP
96 Meg Memory CP	NT9X14EA			00	12F-16F,	RUL10
					23F-27F	
Design Label (NT9X14EA)	P0736863			00	12F-16F,	RUL12
					23F-27F	
Filler Face Plate	NT9X19AA			00		RUL4
PB Filler Face Plate	NT9X19BA			00		RUL4
ENET/W-CM Bulkhead Assembly	NT9X6552		2	00		RUL7,9
CM/SLM Bulkhead Assembly	NT9X6553		2	00		RUL7,9
CM Design. Strip (rear)	P0735782		1	00		AP-01
CM Design. Strip (rear,bot)	P0739105		1	00		AP-01
Shelf Strip, CM/SLM (rear,t)	P0739106		1	00		AP-01
Design Strip, CM/SLM (front)	P0739107		1	00		AP-01
Optical Fiber Label(German)	P0737638					AP
Cabinet Mechanical Hardware						RUL13
End Panel Assy Kit (Brown)	NTRX07AE		2			RUL13
Frame Fail Lamp (Brown)	NT0X24BT		1			RUL13
Rear Frame Fail Lamp (Brown)	P0674502		1			RUL13
End Panel Assy Kit (Grey)	NTRX07AB		2			RUL13
Frame Fail Lamp (Grey)	NT0X24CN		1			RUL13
Rear Frame Fail Lamp (Grey)	P0699441		1			RUL13
Frame Sup.Panel (-60V)	NT9X03BA	FSP	1	52		AP
Cooling Unit (-60V)	NT9X95GU	CU	1	00		AP
Stand-alone Power Cab. kit	NT9X9532		1			RUL14
Horizontal Power Cab.kit	NT9X9531		1			RUL14

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
EMI Contact Strips	P0714698		2			RUL14
C42 Cabinet Mechanical Assy	NT9X95BA					NOTE1

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase.
Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if
they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufac-
tured and cannot be ordered.

NOTES:

- 1) Refer to NT9X95BA(EMA4-07-001) for additional mechanical
hardware requirements for C42 Cabinet.

RULES:

- AP 1) When PEC NTZZ34MB is ordered, these items are provided.
- AP-01 1) These items are provided with NT9X01MB and are listed here
for reference.
- AP-02 1) These items are provided with NT9X7204 and are listed here
for reference.
- AP-03 1) These items are provided with NT9X0810 and are listed here
for reference.

- RUL1
- 1) If ASUs are provisioned on either the LIS or ENI shelf, provide one (1) NTZZ34CA DMS SuperNode SE MS LIS/ENI Interface.
 - 2) To connect the F-BUS from the MS to the LIS shelf only, provide two (2) NT9X7211 F-BUS Cables (LE) and two (2) NT9X7213 F-BUS Cables (RI).
 - 3) To connect the F-BUS from the MS to the ENI and optional LIS, provide two (2) NT9X7210 F-BUS Cables (LE) and two (2) NT9X7212 F-BUS Cables (RI).
 - 4) If there are no ASUs in the LIS or ENI shelf, there is no need to extend the F-Bus from the MS down to the LIS or ENI shelves, in which case, do not order NTZZ34CA Building Block.
- RUL2
- 1) SuperNode SE supports up to six IOCs when configured for the LEC/IEC markets, and up to eight IOCs in the MTX markets. IOC 0, IOC 1, and 2 mandatory Inter-Message-Links (IML), must always be on slot 10 for plane 0 & slot 29 for plane 1.
 - 2) To provision Message Switch for up to two (2) IOCs, equip slots 10F and 29F with NT9X17AD (4 Port MS Interface card) port cards and 10R and 29R with NT9X23AA (4 Link DS-30 Paddle Boards).
 - 3) To provision Message Switch with more than two (2) IOCs and up to eight (8) IOCs, equip slots 10F and 29F with NT9X17BB (32 Port MS Interface card) port cards and 10R and 29R with NT9X69BA (16 Link DS-30 Paddle Boards).
 - 4) To provision Message Switch with up to three (3) LPPs, without JNET, equip slots 10F,11F and 29F,28F with NT9X17BB (32 Port MS Interface card) port cards and 10R,11R and 29R,28R with NT9X69BA (16 Link DS-30 Paddle Boards).
 - 5) The maximum number of JNET network modules that may be provisioned is seven (7) for LEC/IEC markets, except for MSL applications where the limit is ten (10). To support up to four (4) JNET network modules,without LPP, provision one (1) NTZZ34JA DMS SuperNode SE MS 8xDS30 Interface. To support up to ten (10) JNET network modules, and or up to three (3) LPPs, provision one (1) NTZZ34DA DMS SuperNode SE MS 32xDS30 Interface.
 - 6) Bulkheads MUST ALWAYS be job engineered on the MS shelf.

- 7) For Meridian initials which are not SNSE retrofit, and for non-Cabinetized applications, the NT9X6550 and NT9X6551 Bulkheads can be used, when NT9X23AA PBs are used in slots 10 thru 12 for Plane 0 and in slots 29 thru 27 for Plane 1.
- For non-Cabinetized and Meridian Initials, provision,
 - NT9X0434 DS30 Cable Assemblies for each 9X23AA provisioned.
 - NT9X0520 DS30 Cable Assemblies for each 9X69BA provisioned.
 - two (2) NT9X0475 IML DS30 Cable Assemblies (for overhead)

(OR)

- two (2) NT9X0433 IML DS30 Cable Assemblies(for raised floor)

Note that NT9X0434 cables are to be used only with NT9X23AA.

- 8) NT9X6560 and NT9X6561 bulkheads can be used when NT9X23AA PBs are used in slots 10 thru 14 for Plane 0 and in slots 29 thru 25 for Plane 1 for existing Meridian offices. Note that NT9X69BA cannot be used with NT9X6560 and 6561 bulkheads.
- For Existing Meridian applications, provision
 - one (1) NT9X0478 IML IOC0 Cable Assembly(right)
 - one (1) NT9X0479 IML IOC1 Cable Assemblies(left)
 - NT9X0474 DS30 Cable Assembly for each 9X23AA provisioned in slots 11 thru 14 for Plane 0 and in slots 28 thru 25 for Plane 1, only for IOCs.
 - NT9X0182 DS30 Cable Assemblies for each pair of 23AAs provisioned in slots 11 thru 14 for Plane 0 and in slots 28 thru 25 for Plane 1.
- 9) NT9X6567 and NT9X6568 bulkheads can be used when NT9X23AA/69BA PBs are used for Cabinetized(streamline) offices. Provision one (1) NTEX5070 cover plate for each unused cable positions in NT9X6567 and NT9X6558 bulkheads.
- For Streamline application provision,
 - one (1) NT9X6544 IML IOC0 Cable Assembly for 23AA in slot 10 for Plane 0.
 - one (1) NT9X6544 IML IOC1 Cable Assembly for 23AA in slot 29 for Plane 1.

(OR)

- one (1) NT9X0483 14 port Cable Assembly for 69BA in slot 10R for Plane 0.
- one (1) NT9X0487 6 port Cable Assembly for 69BA in slot 11R for Plane 0.
- one (1) NT9X0483 14 port Cable Assembly for 69BA in slot 29R for Plane 1.
- one (1) NT9X0487 6 port Cable Assembly for 69BA in slot 28R for Plane 1.

AND

- two (2) NT9X0489 IML DS30 Cable Assemblies (for overhead)
- two (2) NT9X0488 IML DS30 Cable Assemblies (for raised floor)

Note that JNET is NOT supported with SNSE in streamline application.

Connectors C0-C3;D0-D3;and E0-E3 in the NT9X6567/68 BHs are used for LPP 0, 1 and 2 respectively.

RUL3 1) Message Switch Configurations

The range of port cards and paddle boards that are supported by the SuperNode SE allows it to be configured with up to 8 Input/Output Controllers (IOC), 2 mandatory Inter-Message-Links (IML), up to 3 Link Peripheral Processors (LPP), and either a fully equipped 16K channel Enhanced Network (ENET) or upto 7 junctored Network Modules (JNET/NMs). Note that MSL Cabinet packaged systems can support upto 10 NMs. Where ENET 16K is used, the message switch also provides two slots for interfaces to Application/File Processors(AP/FP) and or Single Shelf LPPs (SSLPP or FLIS) external to the SNSE cabinet.

To Provision Message Switch for internal LIS interface, equip slots 8F and 31F with NT9X73BA(Rate Adapter CP) and 8R and 31R with NT9X79BA, F-Bus Extender Paddle Board.

		ENET	ENET	JNET	JNET
	MS SLOTS	MS P-side ports < than or equal to 128	MS P-side ports > than 128 but < than 256	1 - 4 Network Modules	5 - 7 Net. Mod. OR 10NMs for MSL appl.
2 IMLs 2 IOCs & 0 LPP & 1 FLIS	10 & 29 11 & 28 12 & 27 13 & 26 14 & 25 15 & 24	17AD/23AA 17AD/62BA *17DA/25BA 17DA/62CA	17AD/23AA 17AD/62BA 17CA/62CA 17CA/62CA	17AD/23AA 17AD/23AA 17AD/23AA 17AD/62BA	17AD/23AA 17BB/69BA 17BB/69BA 17AD/62BA
2 IMLs upto 8 IOcs & 0 LPPs	10 & 29 11 & 28 12 & 27 13 & 26 14 & 25 15 & 24	17BB/69BA *17DA/25BA 17DA/62CA	17BB/69BA 17CA/62CA 17CA/62CA	17BB/69BA 17AD/23AA 17AD/23AA	17BB/69BA 17BB/69BA 17BB/69BA
2 IMLs upto 8 IOcs & 3 LPPs	10 & 29 11 & 28 12 & 27 13 & 26 14 & 25 15 & 24	17BB/69BA 17BB/69BA *17DA/25BA 17DA/62CA	17BB/69BA 17BB/69BA 17CA/62CA 17CA/62CA	17BB/69BA 17BB/69BA 17BB/69BA	17BB/69BA 17BB/69BA 17BB/69BA

Note that the SuperNode SE can support either ENET or JNET configurations. It cannot support mixed ENET and JNET configurations, because JNET cannot interwork with ENET. Note that JNET is NOT supported with SNSE in streamline application.

* See the next table.

- 2) Use the following table to provide the circuit packs necessary for the required maximum number of MS and ENET ports. Note that the single MS port card configuration for ENET are recommended at initial office deployment, and two card configurations for subsequent growth.

The ENET interface provisioning is determined by the number of peripheral message channels required per ENET plane and is shown below.

P-side ports/ MS Plane	P-Side Peripheral Msg channels per ENET Pl.	slot 15 & 24		slot 14 & 25	
		Front Front	Rear Rear	Front Front	Rear Rear
				-	-
64	< or = 31	17DA	62CA	-	-
				-	-
128	< or = 63	17DA *17CA	62CA OR 62CA	17DA -	62CA -
256	< or = 127	*17CA	62CA	*17CA	62CA

The circuit pack fill order is:

- 1) 15F/R (MS 0) and 24F/R (MS 1),
- 2) 14F/R (MS 0) and 25F/R (MS 1).

* The NT9X17CA is a 128 port card that is available in BCS35 for Verification Offices(VOs) and ramp offices. The circuit pack will attain General Availability(GA) in BCS36.

If the number of message channels required for interfacing with ENET is less than or equal to 31, Provision one (1) NT9X17DA in slot 15.

If the number of message channels required for interfacing with ENET is less than or equal to 63, provide the NT9X17DA MS 64-Port CPs in two consecutive slots or one (1) NT9X17CA in slot 15.

If the number of message channels required for interfacing with ENET is less than or equal to 127, provide NT9X17CA MS 128-Port CPs in two consecutive slots. Note that NT9X62CA must always be provisioned in slots 15R and 14R for ALL scenario.

3) SR512 Ports

Slots 13 and 26 are always available for additional functionality (That is AP/FP/SSLPP).

To add FLIS provide, two (2) NT9X17AD and two (2) NT9X62BA. To add AP/FP provide, two (2) NT9X17DA and two (2) NT9X62BA.

- RUL4 1) Provision NT9X19AA Filler Face Plates and NT9X19BA Paddleboard Filler Face Plates for all unoccupied slots.

- RUL5 1) Provide one (1) NTZZ34LA DMS SNSE LIS Common CP in shelf position 26 if LIUs are to be provisioned for -60V applications.

If LIUs are equipped on the LIS and ENI shelves, provide:
two (2) NT9X79AA F-Bus Extender Paddleboards and,
two (2) NT9X79AA Des. Labels (P0689621).
These items extend the F-Bus on to the ENI shelf.

If LIUs are equipped on the LIS shelf only, provide:
two (2) NT9X79BA F-Bus Extender with BUS Termination PBs
two (2) NT9X79BA Des. Labels (P0689622).
The NT9X79BA terminate the F-Bus on the LIS shelf.

Provision one (1) NTEX5025 Cover Plate for each unused cable position on the NT9X6534 Bulkhead Assemblies. There are a total of 32 cable connector positions on the bulkheads, 16 on each side.

- 2) If ASU functionality is not required on the LIS shelf, provide one (1) NT9X01FB Filler Packfill, two (2) NT9X6534 LIS Bulkhead Assemblies, and thirty-two (32) NTEX5025 Cover Plates.

Bulkheads MUST ALWAYS be ordered on the LIS shelf, even if fillers are the only packs shipped with the SuperNode SE cabinet.

The NT9X01FB filler packfill contains:

- four (4) NT9X19CA Power Filler Face Plates,
- two (2) NT9X0314 FSP Shorting Plugs (B0225296),
- twenty-six (26) NT9X19AA Filler Face Plates and
- twenty-six (26) NT9X19BA Paddleboard Filler Face Plates,

- RUL6 1) A total of up to twelve (12) LIUs may be provisioned on the LIS. Provision any combination of:
NTZZ30UA CCS7 8 Meg LIU (E-DS0A)
NTZZ30VA CCS7 8 Meg LIU (E/HC-DS0A)
NTZZ30WA CCS7 8 Meg LIU (V.35)
- 2) Provide NT9X19AA Front Filler circuit packs and NT9X19BA Rear Filler paddleboards for all unequipped slots in the LIS shelf.

- RUL7 1) If ENET or LIU functionality is not required in the ENI shelf, and the cabinet is to be shipped with an empty ENI Shelf Assembly, provide one (1) NT9X01FB Filler Packfill, two (2) ENI bulkheads, and two (2) NT9X6553 CM/SLM bulkheads.

The NT9X01FB filler packfill contains:

- four (4) NT9X19CA Power Filler Face Plates,
- two (2) NT9X0314 FSP Shorting Plugs (B0225296),
- twenty-six (26) NT9X19AA Filler Face Plates and
- twenty-six (26) NT9X19BA Paddleboard Filler Face Plates,

Bulkheads MUST ALWAYS be provided on the ENI shelf, even if fillers are the only packs shipped in the ENI shelf.

Bulkheads MUST ALWAYS be provided on the CM/SLM shelf.

- 2) The ENI and CM/SLM bulkheads are provisioned as follows:

BULKHEAD PROVISIONING

The ENI bulkheads have different connectors for non-Cabinetized, Meridian as well as Streamline applications. The bulkhead NT9X6553 is the common CM/SLM bulkhead for Standard, Meridian and Streamline applications.

The NT9X6520/21 pair always requires the NT9X6553 CM/SLM bulkhead for 1 to 48 DS30 links. The NT9X6520/21 pair always requires the NT9X6552 CM/SLM bulkhead for 49 to 96 DS30 links.

Choose one of the bulkhead options listed below:

For standard applications without an SLC, with up to 48 DS30 links provision:

- one (1) NT9X6520 ENI Bulkhead Assembly (left),
- one (1) NT9X6521 ENI Bulkhead Assembly (right) and
- two (2) NT9X6553 CM/SLM Bulkhead Assemblies.

The NT9X6553 CM/SLM bulkheads have no DS30 connection capability.

For standard applications without an SLC, with more than 48 DS30 links, but less than or equal to 96 DS30 links provision:

- one (1) NT9X6520 ENI Bulkhead Assembly (left),
- one (1) NT9X6521 ENI Bulkhead Assembly (right) and
- two (2) NT9X6552 CM/SLM Bulkhead Assemblies

The NT9X6552 CM/SLM bulkheads have extra DS-30 connection capacity.

For standard applications with an SLC, and with more than 48 DS30 links, but less than or equal to 112 DS30 links provision:

one (1) NT9X6530 ENI Bulkhead Assembly (left),
one (1) NT9X6531 ENI Bulkhead Assembly (right) and
two (2) NT9X6553 CM/SLM Bulkhead Assemblies.

The CM bulkhead is required when the DS-30 channel capacity exceeds 48 DS-30s per ENET plane, without an SLC. Forty-eight DS-30s is the maximum connection capacity of a single NT9X6520/21 ENI bulkhead.

- 3) For Meridian applications, provision:
 - two (2) NT9X0813 Bulkhead Assemblies and
 - two (2) NT9X6553 CM/SLM Bulkhead Assemblies.
- 4) For Streamline applications, provision:
 - two (2) NT9X8909 Streamline Bulkhead Assemblies and
 - two (2) NT9X6553 CM/SLM Bulkhead Assemblies.

Note that, when using NT9X8909 ENI Bulkhead with Cabinetized TME without an SLC, only up to a maximum of 14 8-DS30 cables can be used.

- RUL8
- 1) If LIU functionality is required on the ENI shelf, and ENET has been provided, provision one (1) NTZZ34GA DMS SNSE ENI F-Bus Common CP.
 - 2) Provision any combination of:
 - NTZZ30UA CCS7 8 Meg LIU (E-DS0A),
 - NTZZ30VA CCS7 8 Meg LIU (E/HC-DS0A),
 - NTZZ30WA CCS7 8 Meg LIU (V.35)as required.

Note:

A total of up to two (2) LIUs may be provisioned on the ENI shelf.

The ENI shelf cannot support LIUs without the provisioning of an ENET. The reason for this restriction is that the ENET processor circuit packs control the power lock-out for the ENI shelf. If there are no ENET processor packs, there is no power supplied to the ENI shelf.

- RUL9
- 1) The minimum allowable ENET configuration is 4K, with 2K of the initial 4K channels assigned for messaging between the MS and the ENET. The ENET on SuperNode SE is only available in 4K, 8K, 12K and 16K configurations.

- 2) For a 4K ENET, provision one (1) NTZZ34FA DMS SNSE 4K ENET, one (1) NTZZ34KA DMS SNSE ENI Common CP and see item 6) below for cable provisioning requirements.

Provide front fillers (NT9X19AA) and paddleboard fillers (NT9X19BA) for all unprovisioned slots. All slots must be filled to ensure proper air flow for cooling.

- 3) For an 8K ENET, provision one (1) NTZZ34FA DMS SNSE 4K ENET, one (1) NTZZ34KA DMS SNSE ENI Common CP and four (4) NT9X35FA 8K Crosspoint Circuit Packs in slots 14F, 15F for Plane 0, and 24F and 25F for Plane 1.

Also provision any combination of NT9X40BB 4-Port DS512 Fiber Interface Paddleboards, NT9X41BA 16-Port DS30 Paddleboards and NT9X45BA 3-Port DS512 + 16-Port DS30 Paddleboards in slots 14R, 15R, 24R and 25R, provided that slots 14R and 24R have matching paddleboards and slots 15R and 25R also have matching paddleboards.

Also, see 6) below for cable provisioning requirements. Provide front fillers (NT9X19AA) and paddleboard fillers (NT9X19BA) for all unprovisioned slots. All slots must be filled to ensure proper air flow for cooling.

- 4) For a 12K ENET, provision one (1) NTZZ34FA DMS SNSE 4K ENET, one (1) NTZZ34KA DMS SNSE ENI Common CP, and eight (8) NT9X35FA 8K Crosspoint Circuit Packs in slots 14F to 17F for Plane 0 and 24F to 27F for Plane 1.

Also provision any combination of NT9X40BB 4 Port DS512 Fiber Interface Paddleboards, NT9X41BA 16-Port DS30 Paddleboards and NT9X45BA 3-Port DS512 16-Port DS30 Paddleboards in slots 14R to 17R and 24R to 27R, providing that matching paddleboards are used in each of the following pairs of slots:

14R and 24R; 15R and 25R;
16R and 26R; 17R and 27R.

The total number of NT9X41BA and NT9X45BA Paddleboards may not exceed four (4) per ENET plane for Meridian applications.

Also, see 6) below for cable provisioning requirements. Provide front fillers (NT9X19AA) and paddleboard fillers (NT9X19BA) for all unprovisioned slots. All slots must be filled to ensure proper air flow for cooling.

- 5) For a 16K ENET, provision one (1) NTZZ34FA DMS SNSE 4K ENET, one (1) NTZZ34KA DMS SNSE ENI Common CP and twelve

(12) NT9X35FA 8K Crosspoint Circuit Packs in slots 14F to 19F and 24F to 29F.

Also provision any combination of NT9X40BB 4-Port DS512 Fiber Interface Paddleboards, NT9X41BA 16-Port DS30 Paddleboards and NT9X45BA 3-Port DS512 16-Port DS30 Paddleboards in slots 14R to 19R and 24R to 29R, provided that matching paddleboards are used in each of the following pair of slots:

14R and 24R; 15R and 25R;
16R and 26R; 17R and 27R;
18R and 28R; 19R and 29R.

The total number of DS30 ports provided by the NT9X41BA and NT9X45BA Paddleboards may not exceed ninety-six (96) per ENET plane due to the limit of bulkhead cable connectors available to terminate DS30 links.

The total number of NT9X41BA and NT9X45BA Paddleboards may not exceed four (4) per ENET plane for Meridian applications.

The paddleboards in slots 19R and 29R can not be used for DS30 links if NT9X6520 and 6521 bulkheads are provisioned.

Also, see 6) below for cable provisioning requirements. Provide front fillers (NT9X19AA) and paddleboard fillers (NT9X19BA) for all unprovisioned slots. All slots must be filled to ensure proper air flow for cooling.

6) For Standard applications, provision:

one (1) NT9X0520 Cable Assembly per NT9X41BA and
one (1) NT9X0524 Cable Assembly per NT9X45BA
(if the NT9X41BA or NT9X45BA is in slot 17R or 18R and requires DS30 connections to the CM bulkhead in position 00, use NT9X0540 instead of NT9X0520 and NT9X0542 instead of NT9X0524).

for Meridian applications, provision:

one (1) NT9X0815 Cable Assembly per NT9X41BA and
one (1) NT9X0817 Cable Assembly per NT9X45BA.
for up to 64 DS-30s.

For Streamline applications, provision:

one (1) NT9X0546 Cable Assembly per NT9X41BA and
one (1) NT9X0547 Cable Assembly per NT9X45BA
(when an SLC is provided, use NT9X0544 instead of NT9X0546 and use NT9X0545 instead of NT9X0547).

Both of the above cabling scenarios for Streamline allow the termination of up to 112 DS-30 links.

Note:

The NT9X40BB only has fiber ports and fiber cables do not terminate on the bulkhead. The cables from this paddleboard go through a hole in the bulkhead and connect directly to the fiberized peripheral.

7) BULKHEAD PROVISIONING

The ENI bulkheads have different connectors for Standard, Meridian as well as Streamline applications. The bulkhead NT9X6553 is the common CM/SLM bulkhead for Standard, Meridian and Streamline applications.

The NT9X6520/21 pair always requires the NT9X6553 CM/SLM bulkhead for 1 to 48 DS30 links. The NT9X6520/21 pair always requires the NT9X6552 CM/SLM bulkhead for 49 to 96 DS30 links.

The ENI and CM/SLM bulkheads are provisioned as follows:
Choose one of the bulkhead options listed below:

For standard applications without an SLC, with up to 48 DS30 links provision:

one (1) NT9X6520 ENI Bulkhead Assembly (left),
one (1) NT9X6521 ENI Bulkhead Assembly (right) and
two (2) NT9X6553 CM/SLM Bulkhead Assemblies.

The NT9X6553 CM/SLM bulkheads have no DS30 connection capability.

For standard applications without an SLC, with more than 48 DS30 links, but less than or equal to 96 DS30 links provision:

one (1) NT9X6520 ENI Bulkhead Assembly (left),
one (1) NT9X6521 ENI Bulkhead Assembly (right) and
two (2) NT9X6552 CM/SLM Bulkhead Assemblies

The NT9X6552 CM/SLM bulkheads have extra DS-30 connection capacity.

For standard applications with an SLC, and with more than 48 DS30 links, but less than or equal to 112 DS30 links provision:

one (1) NT9X6530 ENI Bulkhead Assembly (left),
one (1) NT9X6531 ENI Bulkhead Assembly (right) and
two (2) NT9X6553 CM/SLM Bulkhead Assemblies.

The CM bulkhead is required when the DS-30 channel capacity exceeds 48 DS-30s per ENET plane, without an SLC. Forty-eight DS-30s is the maximum connection capacity of a single NT9X6520/21 ENI bulkhead.

- RUL10 1) For new jobs at BCS35 and higher, provide the NT9X13MB processor circuit boards. The NT9X13MB Processor provides ability to function with either NT9X14EA (96 Meg memory) or NT9X14DB (24 Meg memory), but not both. That is NT9X14DB and NT9X14EA WILL NOT be supported in a mixed configuration. Check availability prior to ordering NT9X14EA. The RTIF PB NT9X26AB will have to be provisioned with NT9X13MB processor.
- 2) The 96 Meg memory cards are the recommended option on SNSE initials from BCS35 onwards. The 24 Meg memory will only be available on SNSE extensions.
- 3) The NT9X14EA memory boards have the capability to function in burst mode. Burst mode memory is required to fully utilize the Series 60 BRISC processor (BRISC not available until BCS36). The new RTIF NT9X26DB will have to be provisioned with this BRISC processor. 4) The NT9X14DB 24Mb circuit boards are to be provided for memory extensions of existing offices at BCS34. Note that 24Mb circuit boards do not function in burst mode.
- 5) Provision memory circuit packs in pairs, in slots in the following order:
- 1) 16F and 23F;
 - 2) 15F and 24F;
 - 3) 14F and 25F;
 - 4) 13F and 26F;
 - 5) 12F and 27F.

The number of pairs to be provisioned depends on the memory requirement for the office.

RUL11 Deleted

RUL12 1) Provide designation labels as required.

RUL13 1) Provide mechanical hardware for the S/DMS cabinet, such as end guards, frame isolating pads and anchors by using the Engineering Manual inserts:

NT9X95BA - Mechanical Hardware for S/DMS Cabinet,
NTRX73 - Cabinetized DMS Cosmetic Endguards
and EMI Sidepanels.

- 2) Provision two (2) NTRX07AB End Panel Assy Kits (Grey), one (1) NT0X24CN Frame Fail Lamp (Grey) and one (1) P0699441 Rear Frame Fail Lamp for grey cabinets.

OR

- 3) Provision two (2) NTRX07AE End Panel Assy Kits (Brown), one (1) NT0X24BT Frame Fail Lamp (Brown) and one (1) P0674502 Rear Frame Fail Lamp for brown cabinets.
- 4) Provide one (1) NT9X03BA, Frame Supervisory Panel, per Cabinet for -60V powered installations.
- 5) Provide one (1) NT9X95GU, Cooling Unit, per cabinet for -60V powered installations. This unit comes with 3 replaceable blower assemblies(A0382103), and a replaceable electronics module(A0383326) installed. However, customers may desire spares. The Cooling Unit mounts immediately below position 00.

- RUL14 1) Provide one (1) NT9X9532 stand-alone Cabling Interface Kit when powering the NT9X01MB cabinet from the 7 foot PDC frame OR powering from the new CPDC (NTRX31CA) cabinet, OR powering from the NTRX31AA or from the NTRX31BA CPDC cabinet which is in the different lineup than the NT9X01MB. This kit includes cables, filters, and miscellaneous mounting hardware. Twenty-two (22) white boots are included in the NT9X9532 stand-alone Cabling Interface Kit.

Note: The twenty-two white boots MUST NOT be installed on the manufacturing shop floor. The boots must be shipped separately (loose) and installed at the job site.

- 2) Provide one (1) NT9X9531 Horizontal Power Cabling Interface Kit when powering the NT9X01MB cabinet from the NTRX31AA or from the NTRX31BA CPDC cabinet which is in the same lineup as the NT9X01MB. This kit includes power cables, terminal blocks, and miscellaneous mounting hardware.

Always provide:

two (2) EMI contact strips (P0714698)
when providing the NT9X9531 Horizontal Power Cabling Interface Kit.

DMS SUPERNODE SE

PEC CODE: NTZZ34AE

CPC CODE:

| RATING: Manufacturer Discontinued

REPLACES: NTZZ34AD & NTZZ34AC

| REPLACED BY: NTZZ34AF

ABBREVIATION NAME: SCC

ENGINEERING DESCRIPTION: The SNSE houses a Computing Module (CM), a System Load Module (SLM1A), a Message Switch (MS), an Enhanced Network (ENET) and a Link Interface Shelf (LIS).

REFERENCE DOCUMENTATION: SL9X01MB 01 01
SLZZ34AE 00 01
NTZZ34AE REL 01
MS9X01MB 01 12

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA
Carrier
Wireless

ISSUE AUTHOR: NTI: Jerry Palmer Dept. 3471 (PPK)

MAIN CONTACT: NTI: Jerry Palmer Dept. 3471 (PPK)

NTZZ34AE EMC4-06-006 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 10 01	API 211 09	Introduction of New BB NTZZ34AD.
94 02 22	API 211 10	Introduction of DMS Packet Handler.
94 03 10	API 211 11	Introduction of NT9X95BA.
94 06 16	ECM 632 10	Introduction of NT9X53AD clock card, NT9X86AB DPMC card, NT9X91AC power pack, NTDX15AB power pack, NT9X31AB power pack and NT9X30AB power pack. (EC 006-19546)
95 03 23	ECM 632 13	Retire this EM section.

The DMS SuperNode SE is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
DMS SuperNode SE Core Cabnt	NT9X01MB		1			AP
Message Switch Shelf Assy	NT9X0470		1	39		AP-01
-5V Power Converter	NT9X31AB		2	39	01F, 33F	AP
+5V Power Converter	NT9X30AB		2	39	04F, 36F	AP
T-Bus Terminator CP	NT9X49CC		2	39	07F, 32F	AP
Mapper CP	NT9X15AA		2	39	09F, 30F	AP
4-Port MS I/F CP	NT9X17AD		2	39	10F, 29F	RUL2
32-Port MS I/F CP	NT9X17BB		2	39	10F, 29F	RUL2
4-Port MS I/F CP	NT9X17AD		2	39	16F, 23F	AP
MS Processor CP	NT9X13NA		2	39	17F, 22F	AP
#Combined Clock CP	NT9X53AC		2	39	18F, 21F	RUL11
DMS-Bus System Clock CP	NT9X53AD		2	39	18F, 21F	RUL11
T-Bus Access CP	NT9X52AA		2	39	19F, 20F	AP
4-Link DS30 PB	NT9X23AA		2	39	10R, 29R	RUL2
16-Link DS30 PB	NT9X69BA		2	39	10R, 29R	RUL2
32-Port MS I/F CP	NT9X17BB		2	39	11F, 28F	RUL2
(for up to 3 LPPs, no JNET)						
16-Link DS30 PB	NT9X69BA		2	39	11R, 28R	RUL2
(for upto 3 LPPs, no JNET)						
DMS SNSE MS LIS/ENI I/F	NTZZ34CA		1	39	8F	RUL1
F-BUS Cab Assy 3-shelf (LE)	NT9X7210		2	39		RUL1
F-BUS Cab Assy 3-shelf (RI)	NT9X7212		2	39		RUL1
F-BUS Cab Assy 2-shelf (LE)	NT9X7211		2	39		RUL1
F-BUS Cab Assy 2-shelf (RI)	NT9X7213		2	39		RUL1
DMS SNSE MS 8xDS30 I/F	NTZZ34JA		1	39	11F	RUL2
DMS SNSE MS 32xDS30 I/F	NTZZ34DA		1	39	11F	RUL2
MS Bulkhead Assembly (left)	NT9X6550		1	39		RUL2
(for non-Cab & Mer. Initial)						
MS Bulkhead Assembly (right)	NT9X6551		1	39		RUL2
(for non-Cab & Mer. Initial)						
DS30 Cable Assembly	NT9X0434			39		RUL2
(For non-Cabinetized appl.)						
DS30 Cable Assembly	NT9X0520			39		RUL2
(with 69BA for non-Cab appl)						
DS30 IML DS30 Cable Ass.	NT9X0475		2	39		RUL2
(Overhead appl.)						
DS30 IML DS30 Cable Ass.	NT9X0433		2	39		RUL2
(Raised Floor appl.)						
MS Bulkhead Assembly (left)	NT9X6560		1	39		RUL2
(Existing Meridian appl.)						
MS Bulkhead Assembly (right)	NT9X6561		1	39		RUL2
(Existing Meridian appl.)						
IML IOC0 Cable Assembly	NT9X0478		1	39		RUL2

Retired Equipment
DMS SuperNode SE

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EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
(Existing Meridian appl.)						
IML IOC1 Cable Assembly	NT9X0479		1	39		RUL2
(Existing Meridian appl.)						
DS30 Cable Assembly	NT9X0474			39		RUL2
(with 23AA for exi. Mer.)						
DS30 Cable Assembly	NT9X0182			39		RUL2
(23AA in pairs, exi. Mer.)						
Cabinetized Bulkhead (left)	NT9X6567		1	39		RUL2
(Streamline Application)						
Cabinetized Bulkhead (right)	NT9X6568		1	39		RUL2
(Streamline Application)						
14 port DS30 cable assembly	NT9X0483			39		RUL2
6 port DS30 cable assembly	NT9X0487			39		RUL2
DS30 IML DS30 Cable Ass.	NT9X0489		2	39		RUL2
(Cab.appl., Overhead appl.)						
DS30 IML DS30 Cable Ass.	NT9X0488		2	39		RUL2
(Cab.appl., Raised Flr. appl.)						
IML IOC0 Cable Assembly	NT9X6544		1	39		RUL2
(Cabinetized Application)						
IML IOC1 Cable Assembly	NT9X6544		1	39		RUL2
(Cabinetized Application)						
Bulkhead Cover Plate	NTEX5070			39		RUL2
4-Port MS I/F CP	NT9X17AD		2	39	13F, 26F	RUL3
SR-512 Fiber Paddle Board	NT9X62BA		2	39	13R, 26R	RUL3
32-Port MS I/F CP	NT9X17BB		2	39	15F, 24F	RUL3
					14F, 25F	
DMS Bus 64 Port CP	NT9X17DA			39	15F, 24F	RUL3
					14F, 25F	
DMS Bus 128 Port CP	NT9X17CA			39	15F, 24F	RUL3
					14F, 25F	
2-Link SR512 PB	NT9X62CA			39	15R, 24R	RUL3
2-Link SR512 PB	NT9X62CA		2	39	14R, 25R	RUL3
2-Link SR512 PB	NT9X62CA		2	39	16R, 23R	AP
RTIF PB	NT9X26AB		2	39	17R, 22R	AP
Clock Interface PB	NT9X54AC		2	39	18R, 21R	AP
MS Clock Cable Assembly	NT9X0436		1	39		AP
MS Clock Cable Assembly	NT9X0437		1	39		AP
Cable Assembly	NT9X0438		4	39		AP
MS0-MS1 Cable Assembly	NTEX5026		1	39		AP
Filler Face Plate	NT9X19AA			39		RUL4
PB Filler Face Plate	NT9X19BA			39		RUL4
Design Label (NT9X17AD)	P0735096			39	10F, 29F	RUL12
Design Label (NT9X23AA)	P0678443			39	10R, 29R	RUL12
Design Label (NT9X17BB)	P0726962			39	10F, 29F	RUL12
Design Label (NT9X69BA)	P0726964			39	10R, 29R	RUL12
Design Label (NT9X17BB)	P0726962			39	15F, 24F	RUL12

Retired Equipment
DMS SuperNode SE

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EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Design Label (NT9X17DA)	P0707891			39	14F, 25F 15F, 24F	RUL12
Design Label (NT9X17CA)	P0678441			39	14F, 25F 15F, 24F	RUL12
Design Label (NT9X62CA)	P0735105			39	14F, 25F 15R, 24R 14R, 25R	RUL12
Shelf Strip, MS (rear, top)	P0739091		1	39		AP-01
Shelf Strip, MS (rear, bot)	P0739090		1	39		AP-01
MS Design. Strip (front)	P0739092		1	39		AP-01
MS Design. Strip (rear)	P0735784		1	39		AP-01

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Link Interface Shelf Assy	NT9X7204		1	26		AP
Bulkhead Assembly	NT9X6534		2	26		AP
DMS SNSE LIS Common CP	NTZZ34EA		1	26		RUL5
Filler Packfill	NT9X01FB		1	26		RUL5
Cover Plate	NTEX5025		32	26		RUL5
F-Bus Extender PB	NT9X79AA		2	26	07R, 32R	RUL5
Design Label (NT9X79AA)	P0689621		2	26	07R, 32R	RUL5
F-Bus Ext with Term. PB	NT9X79BA		2	26	07R, 32R	RUL5
Design Label (NT9X79BA)	P0689622		2	26	07R, 32R	RUL5
CCS7 8 Meg LIU (E-DS0A)	NTZZ30UA			26	08F, 10F, 12F, 14F, 16F, 18F, 20F, 22F, 24F, 26F, 28F, 30F	RUL6
CCS7 8 Meg LIU (E/HC-DS0A)	NTZZ30VA			26	08F, 10F, 12F, 14F, 16F, 18F, 20F, 22F, 24F, 26F, 28F, 30F	RUL6
CCS7 8 Meg LIU (V.35)	NTZZ30WA			26	08F, 10F, 12F, 14F, 16F, 18F, 28F, 30F	RUL6
NIU	NTZZ30MA			26	18F	RUL6
XLIU	NTZZ30NA			26	Y	RUL6
Filler Face Plate	NT9X19AA		26	26	07F-32F	RUL6
PB Filler Face Plate	NT9X19BA		26	26	07R-32R	RUL6
Shelf Strip LIS (rear, top)	P0739096			26		AP
Shelf Strip LIS (rear, bot)	P0739095			26		AP
Design.Strip LIS (rear)	P0709179			26		AP
Design.Strip LIS (front, top)	P0739097			26		AP
Shelf Strip LIS (front)	P0739094			26		AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
ENI Shelf Assembly	NT9X0810		1	13		AP
Filler Packfill	NT9X01FB		1	13		RUL7
Bulkhead Assembly (left)	NT9X6520		1	13		RUL7,9
Bulkhead Assembly (right)	NT9X6521		1	13		RUL7,9
Bulkhead Assembly (left)	NT9X6530		1	13		RUL7,9
Bulkhead Assembly (right)	NT9X6531		1	13		RUL7,9
Bulkhead Assembly	NT9X0813		2	13		RUL7,9
Streamline Bulkhead Assembly	NT9X8909		2	13		RUL7,9
DMS SNSE ENI F-Bus Common CP	NTZZ34GA		1	13	7F	RUL8
CCS7 8 Meg LIU (E-DS0A)	NTZZ30UA			13	08F,30F,	RUL8
CCS7 8 Meg LIU (E/HC-DS0A)	NTZZ30VA			13	08F,30F,	RUL8
CCS7 8 Meg LIU (V.35)	NTZZ30WA			13	08F,30F,	RUL8
DMS SNSE ENI Common CP	NTZZ34BA		1	13	1F	RUL9
DMS SNSE 4K ENET	NTZZ34FA		1	13		RUL9
8K Crosspoint CP	NT9X35FA			13	14F-19F, 24F-29F	RUL9
4-Port DS512 Fiber I/F PB	NT9X40BB			13	14R-19R, 24R-29R	RUL9
16-Port DS30 PB	NT9X41BA			13	14R-19R, 24R-29R	RUL9
3-Port DS512 16-Port DS30 PB	NT9X45BA			13	14R-19R, 24R-29R	RUL9
Cable Assembly	NT9X0520			13		RUL9
Cable Assembly	NT9X0524			13		RUL9
Cable Assembly	NT9X0540			13		RUL9
Cable Assembly	NT9X0542			13		RUL9
Cable Assembly (Meridian)	NT9X0815			13		RUL9
Cable Assembly (Meridian)	NT9X0817			13		RUL9
Cable Assy (Streamline, XPM)	NT9X0546			13		RUL9
Cable Assy (Streamline, SLC)	NT9X0544			13		RUL9
Cable Assy (Streamline, XPM)	NT9X0547			13		RUL9
Cable Assy (Streamline, SLC)	NT9X0545			13		RUL9
Design Label (NT9X35FA)	P0735098			13	14F-19F, 24F-29F	RUL12
Design Label (NT9X40BB)	P0734155			13	14R-19R, 24R-29R	RUL12
Design Label (NT9X41BA)	P0704528			13	14R-19R, 24R-29R	RUL12
Design Label (NT9X45BA)	P0731527			13	14R-19R, 24R-29R	RUL12
Shelf Strip, ENI (front)	P0739099		1	13		AP-03
Shelf Strip, ENI (rear, bot)	P0739100		1	13		AP
Shelf Strip, ENI (rear, top)	P0739101		1	13		AP
Design Strip, ENI (front)	P0739102		1	13		AP
Design Strip, ENI (rear)	P0735786		1	13		AP

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DMS SuperNode SENTZZ34AE
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EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Cmp Mod Sys Load Mod Sh Assy	NT9X0610		1	00		AP-01
+5V/+12V Power Conv	NT9X91AC		2	00	01F, 36F	AP
+5V/-5V Power Conv	NTDX15AB		2	00	04F, 33F	AP
System Load Module 1A	NT9X44AC		2	00	07F, 28F	AP
CPU Port CP	NT9X12AC		2	00	17F, 22F	AP
#Dual Port Msg Controller CP	NT9X86AA		2	00	18F, 21F	RUL15
Dual Port Msg Controller CP	NT9X86AB		2	00	18F, 21F	RUL15
CM Processor CP	NT9X13MA		2	00	19F, 20F	RUL10
Des. Labels (NT9X13MA)	P0727357		2	00	19F, 20F	RUL12
CM Processor CP	NT9X13MB		2	00	19F, 20F	RUL10
Des. Labels (NT9X13MB)	P0737298		2	00	19F, 20F	RUL12
BRISC Processor CP	NT9X10AA		2	00	19F, 20F	RUL10
Des. Labels (NT9X10AA)	P0734152		2	00	19F, 20F	RUL12
Parallel Port Interface PB	NT9X46AA		4	00	07R, 17R 22R, 28R	AP
P-Bus Terminator PB	NT9X21AB		2	00	12R, 27R	AP
2-Link SR512 PB	NT9X62AA		2	00	18R, 21R	AP
RTIF PB for NT9X13MA & 13MB	NT9X26AB		2	00	19R, 20R	RUL10
RTIF PB for BRISC	NT9X26DB		2	00	19R, 20R	RUL10
CM Extension Cable Assembly	NT9X0167		2	00		AP
E/W 2-25 Pin Cable Assembly	NT9X0160		2	00		AP
RS-232C/Curr Loop Cable Assy	NT9X0196		2	00		AP
Cable Assembly	A0379486		8	00		AP
24 Meg Memory CP	NT9X14DB			00	12F-16F, 23F-27F	RUL10
Design Label (NT9X14DB)	P0700802			00	12F-16F, 23F-27F	RUL12
96 Meg Memory CP	NT9X14EA			00	12F-16F, 23F-27F	RUL10
Design Label (NT9X14EA)	P0736863			00	12F-16F, 23F-27F	RUL12
Filler Face Plate	NT9X19AA			00		RUL4
PB Filler Face Plate	NT9X19BA			00		RUL4
ENET/W-CM Bulkhead Assembly	NT9X6552		2	00		RUL7,9
CM/SLM Bulkhead Assembly	NT9X6553		2	00		RUL7,9
CM Design. Strip (rear)	P0735782		1	00		AP-01
CM Design. Strip (rear,bot)	P0739105		1	00		AP-01
Shelf Strip, CM/SLM (rear,t)	P0739106		1	00		AP-01
Design Strip, CM/SLM (front)	P0739107		1	00		AP-01
Cabinet Mechanical Hardware						RUL13
End Panel Assy Kit (Brown)	NTRX07AE		2			RUL13

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Frame Fail Lamp (Brown)	NT0X24BT		1			RUL13
Rear Frame Fail Lamp (Brown)	P0674502		1			RUL13
End Panel Assy Kit (Grey)	NTRX07AB		2			RUL13
Frame Fail Lamp (Grey)	NT0X24CN		1			RUL13
Rear Frame Fail Lamp (Grey)	P0699441		1			RUL13
E-CORE Frame Supv Panel	NT9X03AA		1	52		RUL13
Cooling Unit (-48V)	NT9X95CU		1			RUL13
Stand-alone Power Cab. kit	NT9X9532		1			RUL14
Horizontal Power Cab.kit	NT9X9531		1			RUL14
EMI Contact Strips	P0714698		2			RUL14
C42 Cabinet Mechanical Assy	NT9X95BA					AP02

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT9X91AA	A&M	NT9X91AC
NTDX15AA	A&M	NTDX15AB
NT9X31AA	A&M	NT9X31AB
NT9X30AA	A&M	NT9X30AB
NT9X86AA	PEND.	NT9X86AB
NT9X53AC	PEND.	NT9X53AD

DEV - DEVELOPMENT. These products are in the development phase.
Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if
they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufac-
tured and cannot be ordered.

NOTES:

- 1) CP mounting position Y = 8F, 10F, 12F, 14F, 16F, 18F, 20F, 22F, 24F, 26F, 28F, 30F.
- 2) Refer to NT9X95BA(EMA4-07-001) for additional mechanical hardware requirements for C42 Cabinet.

RULES:

- AP 1) When PEC NTZZ34AE is ordered, these items are provided.
- AP-01 1) These items are provided with NT9X01MB and are listed here for reference.
- AP-02 1) These items are provided with NT9X7204 and are listed here for reference.
- AP-03 1) These items are provided with NT9X0810 and are listed here for reference.

- RUL1
- 1) If ASUs are provisioned on either the LIS or ENI shelf, provide one (1) NTZZ34CA DMS SuperNode SE MS LIS/ENI Interface.
 - 2) To connect the F-BUS from the MS to the LIS shelf only, provide two (2) NT9X7211 F-BUS Cables (LE) and two (2) NT9X7213 F-BUS Cables (RI).
 - 3) To connect the F-BUS from the MS to the ENI and optional LIS, provide two (2) NT9X7210 F-BUS Cables (LE) and two (2) NT9X7212 F-BUS Cables (RI).
 - 4) If there are no ASUs in the LIS or ENI shelf, there is no need to extend the F-Bus from the MS down to the LIS or ENI shelves, in which case, do not order NTZZ34CA Building Block.
- RUL2
- 1) SuperNode SE supports up to six IOCs when configured for the LEC/IEC markets, and up to eight IOCs in the MTX markets. IOC 0, IOC 1, and 2 mandatory Inter-Message-Links (IML), must always be on slot 10 for plane 0 & slot 29 for plane 1.
 - 2) To provision Message Switch for up to two (2) IOCs, equip slots 10F and 29F with NT9X17AD (4 Port MS Interface card) port cards and 10R and 29R with NT9X23AA (4 Link DS-30 Paddle Boards).
 - 3) To provision Message Switch with more than two (2) IOCs and up to eight (8) IOCs, equip slots 10F and 29F with NT9X17BB (32 Port MS Interface card) port cards and 10R and 29R with NT9X69BA (16 Link DS-30 Paddle Boards).
 - 4) To provision Message Switch with up to three (3) LPPs, without JNET, equip slots 10F,11F and 29F,28F with NT9X17BB (32 Port MS Interface card) port cards and 10R,11R and 29R,28R with NT9X69BA (16 Link DS-30 Paddle Boards).
 - 5) The maximum number of JNET network modules that may be provisioned is seven (7) for LEC/IEC markets, except for MSL applications where the limit is ten (10). To support up to four (4) JNET network modules,without LPP, provision one (1) NTZZ34JA DMS SuperNode SE MS 8xDS30 Interface. To support up to ten (10) JNET network modules, and or up to three (3) LPPs, provision one (1) NTZZ34DA DMS SuperNode SE MS 32xDS30 Interface.
 - 6) Bulkheads MUST ALWAYS be job engineered on the MS shelf.

- 7) For Meridian initials which are not SNSE retrofit, and for non-Cabinetized applications, the NT9X6550 and NT9X6551 Bulkheads can be used, when NT9X23AA PBs or NT9X69BA PBs are used in slots 10 thru 12 for Plane 0 and in slots 29 thru 27 for Plane 1.

- For non-Cabinetized and Meridian Initials, provision,
 - NT9X0434 DS30 Cable Assemblies for each 9X23AA provisioned.
 - NT9X0520 DS30 Cable Assemblies for each 9X69BA provisioned.
 - two (2) NT9X0475 IML DS30 Cable Assemblies (for overhead)

(OR)

- two (2) NT9X0433 IML DS30 Cable Assemblies(for raised floor)

Note that NT9X0434 cables are to be used only with NT9X23AA.

- 8) NT9X6560 and NT9X6561 bulkheads can be used when NT9X23AA PBs are used in slots 10 thru 14 for Plane 0 and in slots 29 thru 25 for Plane 1 for existing Meridian offices. Note that NT9X69BA cannot be used with NT9X6560 and 6561 bulkheads.

- For Existing Meridian applications, provision
 - one (1) NT9X0478 IML IOC0 Cable Assembly(right)
 - one (1) NT9X0479 IML IOC1 Cable Assemblies(left)
 - NT9X0474 DS30 Cable Assembly for each 9X23AA provisioned in slots 11 thru 14 for Plane 0 and in slots 28 thru 25 for Plane 1, only for IOCs.
 - NT9X0182 DS30 Cable Assemblies for each pair of 23AAs provisioned in slots 11 thru 14 for Plane 0 and in slots 28 thru 25 for Plane 1.

- 9) NT9X6567 and NT9X6568 bulkheads can be used when NT9X23AA/69BA PBs are used for Cabinetized(streamline) offices. Provision one (1) NTEX5070 cover plate for each unused cable positions in NT9X6567 and NT9X6558 bulkheads.

- For Streamline application provision,
 - one (1) NT9X6544 IML IOC0 Cable Assembly for 23AA in slot 10 for Plane 0.
 - one (1) NT9X6544 IML IOC1 Cable Assembly for 23AA in slot 29 for Plane 1.

(OR)

- one (1) NT9X0483 14 port Cable Assembly for 69BA in slot 10R for Plane 0.
- one (1) NT9X0487 6 port Cable Assembly for 69BA in slot 11R for Plane 0.
- one (1) NT9X0483 14 port Cable Assembly for 69BA in slot 29R for Plane 1.
- one (1) NT9X0487 6 port Cable Assembly for 69BA in slot 28R for Plane 1.

AND

- two (2) NT9X0489 IML DS30 Cable Assemblies (for overhead)
- two (2) NT9X0488 IML DS30 Cable Assemblies (for raised floor)

Note that JNET is NOT supported with SNSE in streamline application.

Connectors C0-C3;D0-D3;and E0-E3 in the NT9X6567/68 BHs are used for LPP 0, 1 and 2 respectively.

RUL3 1) Message Switch Configurations

The range of port cards and paddle boards that are supported by the SuperNode SE allows it to be configured with up to 8 Input/Output Controllers (IOC), 2 mandatory Inter-Message-Links (IML), upto 3 Link Peripheral Processors (LPP), and either a fully equipped 16K channel Enhanced Network (ENET) or upto 7 junctored Network Modules (JNET/NMs). Note that MSL Cabinet packaged systems can support up to 10 NMs. Where ENET 16K is used, the message switch also provides two slots for interfaces to Application/File Processors(AP/FP) and or Single Shelf LPPs (SSLPP or FLIS) external to the SNSE cabinet.

To Provision Message Switch for internal LIS interface, equip slots 8F and 31F with NT9X73BA(Rate Adapter CP) and 8R and 31R with NT9X79BA, F-Bus Extender Paddle Board.

		ENET	JNET	JNET
	MS SLOTS	MS P-side ports < than 256	1 - 4 Network Modules	5 - 7 Net. Mod. OR 10NMs for MSL appl.
2 IMLs 2 IOCs & 0 LPP & 1 FLIS	10 & 29 11 & 28 12 & 27 13 & 26 14 & 25 15 & 24	17AD/23AA 17AD/62BA *17DA/62CA 17DA/62CA	17AD/23AA 17AD/23AA 17AD/23AA 17AD/62BA	17AD/23AA 17BB/69BA 17BB/69BA 17AD/62BA
2 IMLs up to 8 IOCs & 0 LPPs	10 & 29 11 & 28 12 & 27 13 & 26 14 & 25 15 & 24	17BB/69BA *17DA/62CA 17DA/62CA	17BB/69BA 17AD/23AA 17AD/23AA	17BB/69BA 17BB/69BA 17BB/69BA
2 IMLs up to 8 IOCs & 3 LPPs	10 & 29 11 & 28 12 & 27 13 & 26 14 & 25 15 & 24	17BB/69BA 17BB/69BA *17DA/62CA 17DA/62CA	17BB/69BA 17BB/69BA 17BB/69BA	17BB/69BA 17BB/69BA 17BB/69BA

Note that the SuperNode SE can support either ENET or JNET configurations. It cannot support mixed ENET and JNET configurations, because JNET cannot interwork with ENET.

* See the next table.

- 2) Use the following table to provide the circuit packs necessary for the required maximum number of MS and ENET ports. Note that the single MS port card configuration for ENET are recommended at initial office deployment, and two card configurations for subsequent growth.

The ENET interface provisioning is determined by the number of peripheral message channels required per ENET plane and is shown below.

P-side ports/ MS Plane	P-Side Peripheral Msg channels per ENET Pl.	slot 15 & 24		slot 14 & 25	
		Front Front	Rear Rear	Front Front	Rear Rear
				-	-
32 64	0 to 15 16 to 31	17BB 17BB	62CA 62CA	- 17BB	- 25BA
		OR			
64 96 128	16 to 31 32 to 47 48 to 63	17DA 17DA 17DA	62CA 62CA 62CA	17BB 17DA	25BA 25BA
		OR			
128 256	48 to 63 64 to 127	*17CA 17CA	62CA 62CA	*17CA	25BA

The circuit pack fill order is:

- 1) 15F/R (MS 0) and 24F/R (MS 1),
- 2) 14F/R (MS 0) and 25F/R (MS 1).

* The NT9X17CA is a 128 port card that has attained General Availability (GA) in BCS36.

If the number of message channels required for interfacing with ENET is less than or equal to 31, Provision one (1) NT9X17DA in slot 15.

If the number of message channels required for interfacing with ENET is less than or equal to 63, provide the NT9X17DA MS 64-Port CPs in two consecutive slots or one (1) NT9X17CA in slot 15.

If the number of message channels required for interfacing with ENET is less than or equal to 127, provide NT9X17CA MS 128-Port CPs in two consecutive slots. Note that NT9X62CA must always be provisioned in slots 15R and 14R for ALL scenario.

3) SR512 Ports

Slots 13 and 26 are always available for additional functionality (That is AP/FP/SSLPP).

To add FLIS provide, two (2) NT9X17AD and two (2) NT9X62BA.
To add AP/FP provide, two (2) NT9X17AD and two (2) NT9X62BA.

- RUL4 1) Provision NT9X19AA Filler Face Plates and NT9X19BA Paddleboard Filler Face Plates for all unoccupied slots.

- RUL5 1) Provide one (1) NTZZ34EA DMS SNSE LIS Common CP in shelf position 26 if LIUs are to be provisioned.

If LIUs are equipped on the LIS and ENI shelves, provide:
two (2) NT9X79AA F-Bus Extender Paddleboards and,
two (2) NT9X79AA Des. Labels (P0689621).
These items extend the F-Bus on to the ENI shelf.

If LIUs are equipped on the LIS shelf only, provide:
two (2) NT9X79BA F-Bus Extender with BUS Termination PBs
two (2) NT9X79BA Des. Labels (P0689622).
The NT9X79BA terminate the F-Bus on the LIS shelf.

Provision one (1) NTEX5025 Cover Plate for each unused cable position on the NT9X6534 Bulkhead Assemblies. There are a total of 32 cable connector positions on the bulkheads, 16 on each side.

- 2) If ASU functionality is not required on the LIS shelf, provide one (1) NT9X01FB Filler Packfill and thirty-two (32) NTEX5025 Cover Plates. Note that the NT9X6534 BH is always provided with NTZZ34AD.

Bulkheads MUST ALWAYS be equipped on the LIS shelf, even if fillers are the only packs shipped with the SuperNode SE cabinet.

The NT9X01FB filler packfill contains:

- four (4) NT9X19CA Power Filler Face Plates,
- two (2) NT9X0314 FSP Shorting Plugs (B0225296),
- twenty-six (26) NT9X19AA Filler Face Plates and
- twenty-six (26) NT9X19BA Paddleboard Filler Face Plates,

- RUL6 1) A total of up to twelve (12) ASUs may be provisioned on the LIS. Provision any combination of:
NTZZ30UA CCS7 8 Meg LIU (E-DS0A)
NTZZ30VA CCS7 8 Meg LIU (E/HC-DS0A)
NTZZ30WA CCS7 8 Meg LIU (V.35)
NTZZ30MA Network Interface Unit
NTZZ30NA X.25/X.75 Link Interface Unit
- 2) Provide NT9X19AA Front Filler circuit packs and NT9X19BA Rear Filler paddleboards for all unequipped slots in the LIS shelf.

- 3) Provide one NTZZ30MA for each Network Interface Unit required. One NIU provides network interface capability for one complete LIS shelf (maximum of eight XLIUs).
- 4) Provide one NTZZ30NA for each X.25/X.75 Link Interface Unit required.
- 5) The LIS will support up to eight (8) DMS Packet Handler plus two (2) LIU7s per application. The LIS shelf can support up to a maximum of eight (8) DMS packet handler and two LIU7s.

Each DMS Packet Handler is composed of two circuit packs and one paddleboard. Note that LIS MUST be provisioned with NIUs to use the DMS Packet Handler configuration.

- 6) The LIS will support one pair of Network Interface Unit (NIU) and upto a maximum of ONE per SNSE Cabinet. The NIU can be located only in the centre of the LIS shelf, and it is divided into two halves. Unit 0 for Plane 0 and Unit 1 for Plane 1 respectively. The NIU provides a connection from the LIS shelf to the network.

Each Network Interface Unit (NIU) is composed of two circuit packs and one paddleboard.

Refer to Figure below for Unit 0 and Unit 1. Also refer to NTZZ30MA BB section for ALWAYS PROVIDED circuit packs and paddle boards.

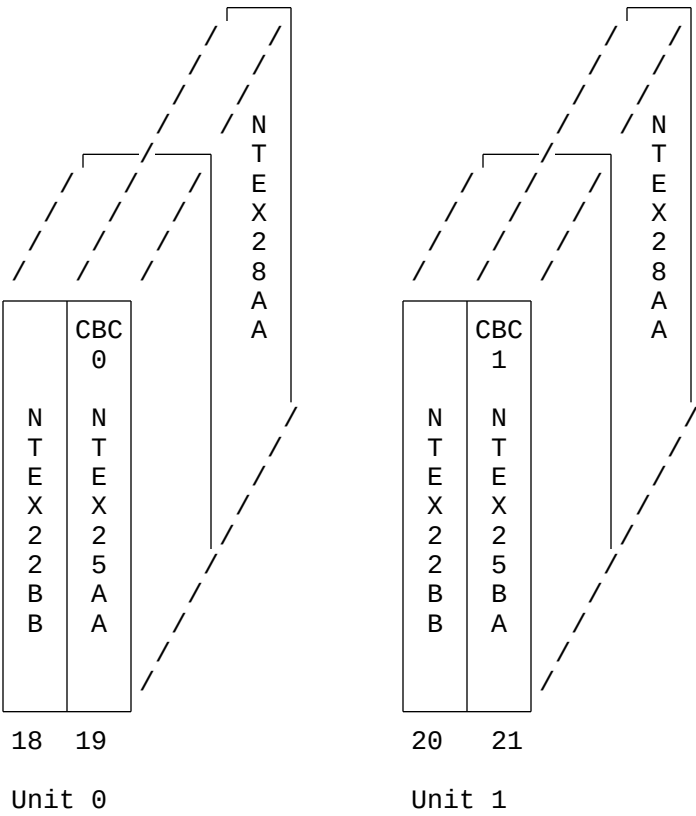


Figure NIU Unit 0 and Unit 1 Configuration.

- 7) Each DMS Packet Handler is composed of two circuit packs and one paddleboard. Note that LIS MUST be provisioned with NIUs to use the DMS Packet Handler configuration.

Refer to Figure below. Also refer to NTZZ30NA BB section for ALWAYS PROVIDED circuit packs and paddle boards.

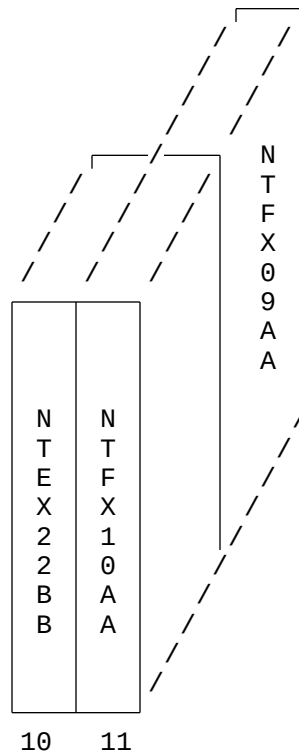


Figure DMS - Packet Handler Configuration

- 8) Provision one (1) NT9X0193 STP Cable Assembly from each LIU paddleboard to the LIS bulkhead.

Provision one (1) P0675703 Rear Bottom Shelf ID Label per LIS provisioned.

Provision one (1) P0709181 LIU (two slot) Identification Label per LIU provisioned.

Provision one (1) P0704358 Designation Label per NT9X77AA provisioned.

Provision one (1) P0704359 Designation Label per NT9X78BA provisioned.

- RUL7 1) If ENET or LIU functionality is not required in the ENI shelf, and the cabinet is to be shipped with an empty ENI Shelf Assembly, provide one (1) NT9X01FB Filler Packfill, two (2) ENI bulkheads, and two (2) NT9X6553 CM/SLM bulkheads.

The NT9X01FB filler packfill contains:

- four (4) NT9X19CA Power Filler Face Plates,
- two (2) NT9X0314 FSP Shorting Plugs (B0225296),
- twenty-six (26) NT9X19AA Filler Face Plates and
- twenty-six (26) NT9X19BA Paddleboard Filler Face Plates,

Bulkheads MUST ALWAYS be provided on the ENI shelf, even if fillers are the only packs shipped in the ENI shelf.

Bulkheads MUST ALWAYS be provided on the CM/SLM shelf.

- 2) The ENI and CM/SLM bulkheads are provisioned as follows:

BULKHEAD PROVISIONING

The ENI bulkheads have different connectors for non-Cabinetized, Meridian as well as Streamline applications. The bulkhead NT9X6553 is the common CM/SLM bulkhead for Standard, Meridian and Streamline applications.

The NT9X6520/21 pair always requires the NT9X6553 CM/SLM bulkhead for 1 to 48 DS30 links. The NT9X6520/21 pair always requires the NT9X6552 CM/SLM bulkhead for 49 to 96 DS30 links.

Choose one of the bulkhead options listed below:

For standard applications without an SLC, with up to 48 DS30 links provision:

- one (1) NT9X6520 ENI Bulkhead Assembly (left),
- one (1) NT9X6521 ENI Bulkhead Assembly (right) and
- two (2) NT9X6553 CM/SLM Bulkhead Assemblies.

The NT9X6553 CM/SLM bulkheads have no DS30 connection capability.

For standard applications without an SLC, with more than 48 DS30 links, but less than or equal to 96 DS30 links provision:

- one (1) NT9X6520 ENI Bulkhead Assembly (left),
- one (1) NT9X6521 ENI Bulkhead Assembly (right) and
- two (2) NT9X6552 CM/SLM Bulkhead Assemblies

The NT9X6552 CM/SLM bulkheads have extra DS-30 connection capacity.

For standard applications with an SLC, and with more than 48 DS30 links, but less than or equal to 112 DS30 links provision:

one (1) NT9X6530 ENI Bulkhead Assembly (left),
one (1) NT9X6531 ENI Bulkhead Assembly (right) and
two (2) NT9X6553 CM/SLM Bulkhead Assemblies.

The CM bulkhead is required when the DS-30 channel capacity exceeds 48 DS-30s per ENET plane, without an SLC. Forty-eight DS-30s is the maximum connection capacity of a single NT9X6520/21 ENI bulkhead.

- 3) For Meridian applications, provision:
 - two (2) NT9X0813 Bulkhead Assemblies and
 - two (2) NT9X6553 CM/SLM Bulkhead Assemblies.
- 4) For Streamline applications, provision:
 - two (2) NT9X8909 Streamline Bulkhead Assemblies and
 - two (2) NT9X6553 CM/SLM Bulkhead Assemblies.

Provision one (1) NTEX5025 Cover Plate for each unused cable position on the NT9X8909 Bulkhead Assemblies. There are a total of 28 cable connector positions on the bulkheads, 14 on each side. Note that, when using NT9X8909 ENI Bulkhead with Cabinetized TME without an SLC, only upto a maximum of 14 8-DS30 cables can be used.

- RUL8
- 1) If LIU functionality is required on the ENI shelf, and ENET has been provided, provision one (1) NTZZ34GA DMS SNSE ENI F-Bus Common CP.
 - 2) Provision any combination of:
 - NTZZ30UA CCS7 8 Meg LIU (E-DS0A),
 - NTZZ30VA CCS7 8 Meg LIU (E/HC-DS0A),
 - NTZZ30WA CCS7 8 Meg LIU (V.35)as required.

Note:

A total of up to two (2) LIUs may be provisioned on the ENI shelf.

The ENI shelf cannot support LIUs without the provisioning of an ENET. The reason for this restriction is that the ENET processor circuit packs control the power lock-out for the ENI shelf. If there are no ENET processor packs, there is no power supplied to the ENI shelf.

- RUL9
- 1) The minimum allowable ENET configuration is 4K, with 2K of the initial 4K channels assigned for messaging between the

MS and the ENET. The ENET on SuperNode SE is only available in 4K, 8K, 12K and 16K configurations.

- 2) For a 4K ENET, provision one (1) NTZZ34FA DMS SNSE 4K ENET, one (1) NTZZ34BA DMS SNSE ENI Common CP and see item 6) below for cable provisioning requirements.

Provide front fillers (NT9X19AA) and paddleboard fillers (NT9X19BA) for all unprovisioned slots. All slots must be filled to ensure proper air flow for cooling.

- 3) For an 8K ENET, provision one (1) NTZZ34FA DMS SNSE 4K ENET, one (1) NTZZ34BA DMS SNSE ENI Common CP and four (4) NT9X35FA 8K Crosspoint Circuit Packs in slots 14F, 15F for Plane 0, and 24F and 25F for Plane 1.

Also provision any combination of NT9X40BB 4-Port DS512 Fiber Interface Paddleboards, NT9X41BA 16-Port DS30 Paddleboards and NT9X45BA 3-Port DS512 + 16-Port DS30 Paddleboards in slots 14R, 15R, 24R and 25R, provided that slots 14R and 24R have matching paddleboards and slots 15R and 25R also have matching paddleboards.

Also, see 6) below for cable provisioning requirements. Provide front fillers (NT9X19AA) and paddleboard fillers (NT9X19BA) for all unprovisioned slots. All slots must be filled to ensure proper air flow for cooling.

- 4) For a 12K ENET, provision one (1) NTZZ34FA DMS SNSE 4K ENET, one (1) NTZZ34BA DMS SNSE ENI Common CP, and eight (8) NT9X35FA 8K Crosspoint Circuit Packs in slots 14F to 17F for Plane 0 and 24F to 27F for Plane 1.

Also provision any combination of NT9X40BB 4 Port DS512 Fiber Interface Paddleboards, NT9X41BA 16-Port DS30 Paddleboards and NT9X45BA 3-Port DS512 16-Port DS30 Paddleboards in slots 14R to 17R and 24R to 27R, providing that matching paddleboards are used in each of the following pairs of slots:
14R and 24R; 15R and 25R;
16R and 26R; 17R and 27R.

The total number of NT9X41BA and NT9X45BA Paddleboards may not exceed four (4) per ENET plane for Meridian applications.

Also, see 6) below for cable provisioning requirements. Provide front fillers (NT9X19AA) and paddleboard fillers (NT9X19BA) for all unprovisioned slots. All slots must be filled to ensure proper air flow for cooling.

- 5) For a 16K ENET, provision one (1) NTZZ34FA DMS SNSE 4K ENET, one (1) NTZZ34BA DMS SNSE ENI Common CP and twelve (12) NT9X35FA 8K Crosspoint Circuit Packs in slots 14F to 19F and 24F to 29F.

Also provision any combination of NT9X40BB 4-Port DS512 Fiber Interface Paddleboards, NT9X41BA 16-Port DS30 Paddleboards and NT9X45BA 3-Port DS512 16-Port DS30 Paddleboards in slots 14R to 19R and 24R to 29R, provided that matching paddleboards are used in each of the following pair of slots:

14R and 24R; 15R and 25R;
16R and 26R; 17R and 27R;
18R and 28R; 19R and 29R.

The total number of DS30 ports provided by the NT9X41BA and NT9X45BA Paddleboards may not exceed ninety-six (96) per ENET plane due to the limit of bulkhead cable connectors available to terminate DS30 links.

The total number of NT9X41BA and NT9X45BA Paddleboards may not exceed four (4) per ENET plane for Meridian applications.

The paddleboards in slots 19R and 29R can not be used for DS30 links if NT9X6520 and 6521 bulkheads are provisioned.

Also, see 6) below for cable provisioning requirements. Provide front fillers (NT9X19AA) and paddleboard fillers (NT9X19BA) for all unprovisioned slots. All slots must be filled to ensure proper air flow for cooling.

- 6) For Standard applications, provision:

one (1) NT9X0520 Cable Assembly per NT9X41BA and
one (1) NT9X0524 Cable Assembly per NT9X45BA
(if the NT9X41BA or NT9X45BA is in slot 17R or 18R and requires DS30 connections to the CM bulkhead in position 00, use NT9X0540 instead of NT9X0520 and NT9X0542 instead of NT9X0524).

for Meridian applications, provision:

one (1) NT9X0815 Cable Assembly per NT9X41BA and
one (1) NT9X0817 Cable Assembly per NT9X45BA.
for up to 64 DS-30s.

For Streamline applications, provision:

one (1) NT9X0546 Cable Assembly per NT9X41BA and
one (1) NT9X0547 Cable Assembly per NT9X45BA
(when an SLC is provided, use NT9X0544 instead of NT9X0546 and use NT9X0545 instead of NT9X0547).

Both of the above cabling scenarios for Streamline allow the termination of up to 112 DS-30 links.

Note:

The NT9X40BB only has fiber ports and fiber cables do not terminate on the bulkhead. The cables from this paddleboard go through a hole in the bulkhead and connect directly to the fiberized peripheral.

7) BULKHEAD PROVISIONING

The ENI bulkheads have different connectors for Standard, Meridian as well as Streamline applications. The bulkhead NT9X6553 is the common CM/SLM bulkhead for Standard, Meridian and Streamline applications.

The NT9X6520/21 pair always requires the NT9X6553 CM/SLM bulkhead for 1 to 48 DS30 links. The NT9X6520/21 pair always requires the NT9X6552 CM/SLM bulkhead for 49 to 96 DS30 links.

The ENI and CM/SLM bulkheads are provisioned as follows:
Choose one of the bulkhead options listed below:

For standard applications without an SLC, with up to 48 DS30 links provision:

one (1) NT9X6520 ENI Bulkhead Assembly (left),
one (1) NT9X6521 ENI Bulkhead Assembly (right) and
two (2) NT9X6553 CM/SLM Bulkhead Assemblies.

The NT9X6553 CM/SLM bulkheads have no DS30 connection capability.

For standard applications without an SLC, with more than 48 DS30 links, but less than or equal to 96 DS30 links provision:

one (1) NT9X6520 ENI Bulkhead Assembly (left),
one (1) NT9X6521 ENI Bulkhead Assembly (right) and
two (2) NT9X6552 CM/SLM Bulkhead Assemblies

The NT9X6552 CM/SLM bulkheads have extra DS-30 connection capacity.

For standard applications with an SLC, and with more than 48 DS30 links, but less than or equal to 112 DS30 links provision:

one (1) NT9X6530 ENI Bulkhead Assembly (left),
one (1) NT9X6531 ENI Bulkhead Assembly (right) and
two (2) NT9X6553 CM/SLM Bulkhead Assemblies.

The CM bulkhead is required when the DS-30 channel capacity exceeds 48 DS-30s per ENET plane, without an SLC. Forty-eight DS-30s is the maximum connection capacity of a single NT9X6520/21 ENI bulkhead.

- RUL10 1) Provide two NT9X13MA processors to support the CM section of the SuperNode SE. The NT9X13MA supports 24Mb memory only. The RTIF PB NT9X26AB will have to be provisioned with NT9X13MA processor.
- 2) For new jobs at BCS35 and higher, provide the NT9X13MB processor circuit boards. The NT9X13MB Processor provides ability to function with either NT9X14EA (96 Meg memory) or NT9X14DB (24 Meg memory), but not both. That is NT9X14DB and NT9X14EA WILL NOT be supported in a mixed configuration. Check availability prior to ordering NT9X14EA. The RTIF PB NT9X26AB will have to be provisioned with NT9X13MB processor.
- 3) The NT9X14EA memory boards have the capability to function in burst mode. Burst mode memory is required to fully utilize the Series 60 BRISC processor (BRISC not available until BCS36). Note that the new RTIF NT9X26DB will have to be provisioned with this BRISC processor.
- 4) Provision memory circuit packs in pairs, in slots in the following order:
- 1) 16F and 23F;
 - 2) 15F and 24F;
 - 3) 14F and 25F;
 - 4) 13F and 26F;
 - 5) 12F and 27F.

The number of pairs to be provisioned depends on the memory requirement for the office.

- RUL11 1) Provide one (1) MS External Clock Interface PB (NT9X54AC) in card slot POS 8R in shelf position 26,39 for Stratum I, Stratum II, Stratum 2.5 or Stratum III North American applications.
- 2) Provide one (1) MS External Clock PB (NT9X54AD) in card slot POS 8R in shelf position 26,39 for all Japan offices.
- 3) The NT9X53AD is functionally compatible with NT9X54AC. However, the NT9X53AD is the recommended pack.

Note that, NT9X53AC is incompatible with BCS30 or older BCS's. NT9X53AD is incompatible with BCS36 or older BCS's. For Stratum 2 applications, provision the NT9X53AC instead of the NT9X53AD.

- RUL12 1) Provide designation labels as required.

- RUL13 1) Provide mechanical hardware for the S/DMS cabinet, such as end guards, frame isolating pads and anchors by using the Engineering Manual inserts:

NT9X95BA - Mechanical Hardware for S/DMS Cabinet,
NTRX73 - Cabinetized DMS Cosmetic Endguards
and EMI Sidepanels.

- 2) Provision two (2) NTRX07AB End Panel Assy Kits (Grey), one (1) NT0X24CN Frame Fail Lamp (Grey) and one (1) P0699441 Rear Frame Fail Lamp for grey cabinets.
OR
- 3) Provision two (2) NTRX07AE End Panel Assy Kits (Brown), one (1) NT0X24BT Frame Fail Lamp (Brown) and one (1) P0674502 Rear Frame Fail Lamp for brown cabinets.
- 4) For offices with -48 volt power convertors, provide one (1) Cooling Unit (-48V) (NT9X95CU) and one (1) E-CORE Frame Supv Panel (NT9X03AA).

- RUL14 1) Provide one (1) NT9X9532 stand-alone Cabling Interface Kit when powering the NT9X01MB cabinet from the 7 foot PDC frame OR powering from the new CPDC (NTRX31CA) cabinet, OR powering from the NTRX31AA or from the NTRX31BA CPDC cabinet which is in the different lineup than the NT9X01MB. This kit includes cables, filters, and miscellaneous mounting hardware.
Twenty-two (22) white boots are included in the NT9X9532 stand-alone Cabling Interface Kit.

Note: The twenty-two white boots MUST NOT be installed on the manufacturing shop floor. The boots must be shipped separately (loose) and installed at the job site.

- 2) Provide one (1) NT9X9531 Horizontal Power Cabling Interface Kit when powering the NT9X01MB cabinet from the NTRX31AA or from the NTRX31BA CPDC cabinet which is in the same lineup as the NT9X01MB. This kit includes power cables, terminal blocks, and miscellaneous mounting hardware.

Always provide:

two (2) EMI contact strips (P0714698)
when providing the NT9X9531 Horizontal Power Cabling Interface Kit.

- RUL15 1) Provide two (2) NT9X86AA Dual Port Message Controllers when the CM Processor (NT9X13MA or NT9X13MB) is provided.

- 2) Provide two (2) NT9X86AB Dual Port Message Controllers when the BRISC processor (NT9X10AA) is provided.

SUPERNODE SE ENI COMMON CP
DMS SUPERNODE SE

PEC CODE: NTZZ34BA

CPC CODE:

RATING: Manufacturer Discontinued

| REPLACES: Not Applicable

| REPLACED BY: NTZZ34BB

ABBREVIATION NAME:

ENGINEERING DESCRIPTION: Provides the components required to support
the ENET shelf.

REFERENCE DOCUMENTATION: SLZZ34BA 00 01

MARKETS: Applicable markets:

Canada
CALA
Asia/Pacific
Europe

| ISSUE AUTHOR: NTI: Jerry Palmer Dept. 3471 (PPK)

| MAIN CONTACT: NTI: Jerry Palmer Dept. 3471 (PPK)

NTZZ34BA EMC4-06-007 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 92 11 02	----- ECM 632 03	Previous history not available Remove shelf design labels as they are now provided in the frame BB. Retire this EM section.
95 03 23	ECM 632 13	

The SuperNode SE ENI Common CP DMS SuperNode SE is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-5V Power Converter	NT9X31AA		2	13	01F, 33F	AP
+5V Power Converter	NT9X30AA		2	13	04F, 36F	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

AP 1) When PEC NTZZ34BA is ordered, these items are provided.

DMS SUPERNODE SE LIS COMMON CP

PEC CODE: NTZZ34EA

CPC CODE: B0234537

| RATING: Manufacturer Discontinued

REPLACES: Not Applicable

| REPLACED BY: NTZZ34EB

ABBREVIATION NAME:

ENGINEERING DESCRIPTION: The DMS SuperNode SE LIS Common CP provides the minimum components necessary for a functional link interface shelf.

REFERENCE DOCUMENTATION: SLZZ34EA 00 05
NTZZ34EA REL 05

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA
Carrier
Wireless

| ISSUE AUTHOR: NTI: Jerry Palmer Dept. 3471 (PPK)

| MAIN CONTACT: NTI: Jerry Palmer Dept. 3471 (PPK)

NTZZ34EA EMC4-06-008 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 04 28	ECM 632 01	First issue of insert
92 09 29	ECM 632 02	Add Streamline information
92 11 02	ECM 632 03	Move NT9X7210,11,12,13 cables to NTZZ34CA insert.
93 01 15	ECM 632 04	RULs are moved to NTZZ34AB section Labels are corrected.
93 08 10	ECM 632 06	LIS Shelf Design strip labels are removed form NTZZ34EA SL since they are AP in NTZZ34AC Building Block. The BH NT9X6534 has been removed and included in NTZZ34AC BB.
95 03 23	ECM 632 13	Retire this EM section.

The DMS SuperNode SE LIS Common CP is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
STP Filler Pack	NT9X19EA		2	26	01F, 33F	AP
+5V Power Converter	NT9X30AA		2	26	04F, 36F	AP
F-Bus Repeater CP	NT9X74CA		2	26	07F, 32F	AP
F-Bus B Terminator PB	NTEX20BA		1	26	08R	AP
F-Bus A Terminator PB	NTEX20AA		1	26	30R	AP
PCB Shorting Lnk Mini Jumper	A0292488		1	26		AP
Design Label (NT9X30AA)	P0709512		2	26	04F, 36F	AP
Design Label (NTEX20BA)	P0704361		1	26	08R	AP
Design Label (NTEX20AA)	P0704360		1	26	30R	AP
Design Label (NT9X74CA)	P0737300		2	26	07F, 32F	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

AP 1) When PEC NTZZ34EA is ordered, these items are provided.

DMS SUPERNODE SE LIS COMMON CP

PEC CODE: NTZZ34EB

CPC CODE:

RATING: Manufacturer Discontinued

| REPLACES: NTZZ34EA

REPLACED BY: Not Applicable

ABBREVIATION NAME:

ENGINEERING DESCRIPTION: The DMS Supernode SE LIS Common CP provides the minimum components necessary for a functional link interface shelf.

REFERENCE DOCUMENTATION: SLZZ34EB 00 05
NTZZ34EB REL 01

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA
Carrier
Wireless

ISSUE AUTHOR: NTI: Jerry Palmer Dept. 3471 (NTI)

MAIN CONTACT: NTI: Jerry Palmer Dept. 3471 (NTI)

NTZZ34EB EMC4-06-009 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 04 28	ECM 632 01	First issue of insert
92 09 29	ECM 632 02	Add Streamline information
92 11 02	ECM 632 03	Move NT9X7210,11,12,13 cables to NTZZ34CA insert.
93 01 15	ECM 632 04	RULs are moved to NTZZ34AB section Labels are corrected.
93 08 10	ECM 632 06	LIS Shelf Design strip labels are removed form NTZZ34EA SL since they are AP in NTZZ34AC Building Block. The BH NT9X6534 has been removed and included in NTZZ34AC BB.
94 10 13	ECM 632 11	Introduce NT9X30AB Global Power Converters and NT9X74DA F-Bus Repeater CP.
95 11 08	ECM 632 16	MD this section.

The DMS SuperNode SE LIS Common CP is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
STP Filler Pack	NT9X19EA		2	26	01F, 33F	AP
#+5V Global Power Converter	NT9X30AB		2	26	04F, 36F	AP
#F-Bus Repeater CP	NT9X74DA		2	26	07F, 32F	AP
F-Bus B Terminator PB	NTEX20BA		1	26	08R	AP
F-Bus A Terminator PB	NTEX20AA		1	26	30R	AP
PCB Shorting Lnk Mini Jumper	A0292488		1	26		AP
Design Label (NT9X30AA)	P0709512		2	26	04F, 36F	AP
Design Label (NTEX20BA)	P0704361		1	26	08R	AP
Design Label (NTEX20AA)	P0704360		1	26	30R	AP
Design Label (NT9X74CA)	P0737300		2	26	07F, 32F	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT9X30AA	A&M	NT9X30AB
NT9X74CA	A&M	NT9X74DA

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

AP 1) When PEC NTZZ34EB is ordered, these items are provided.

DMS SUPERNODE SE COMBINED CABINET: (-60V)

PEC CODE: NTZZ34MC

CPC CODE:

| RATING: Manufacturer Discontinued

| REPLACES: NTZZ34MB

| REPLACED BY: NTZZ34MD

ABBREVIATION NAME: SCC

ENGINEERING DESCRIPTION: The DMS SuperNode SE Combined Cabinet: (-60V) houses a Computing Module (CM), a System Load Module 1A (SLM1A), a Message Switch (MS), an Enhanced Network (ENET) and a Link Interface Shelf (LIS).

The NTZZ34MA Building Block is for applications for markets that utilize -60V power.

REFERENCE DOCUMENTATION: SL9X01MB 01 01
MS9X01MB 01 12
SLZZ34MC 00 01
NTZZ34MB REL 02

MARKETS: Applicable markets:

Europe

ISSUE AUTHOR: NTI: Jerry Palmer Dept. 3471 (PPK)

MAIN CONTACT: NTI: Jerry Palmer Dept. 3471 (PPK)

NTZZ34MC EMC4-06-010 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 08 10	ECM 632 06	NTZZ34MA became MD and replaced by NTZZ34MB. In NTZZ34MB the FSP and CU for -60V are always provided. Also 24 Meg memory is not an option in 34MB
93 12 21	ECM 632 07	Correct SLZZ34MB stocklist to have 2 NT9X26AB. Introduction of NT9X0183 and NT9X0187 cables for cabinetized BHs 9X6567/68. Cables must be used with NT9X69BA cps. Changes to item 9 of RUL2. NT9X62CA must always be used. DO NOT use NT9X25BA in MS for ENET appl..
94 02 23	ECM 632 08	To show issue 07 update in CODA. Also modify RUL2 item 7.
94 03 10	ECM 632 09	Replace the NT9X95AA with the NT9X95BA. (ECD: 018-41431)
94 06 16	ECM 632 10	Introduction of NT9X53AD clock card, NT9X86AB DPMC card, NT9X91AC power pack, (EC 006-19546)
95 03 23	ECM 632 13	Retire this EM section.

The DMS SuperNode SE Combined Cabinet: (-60V) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
DMS SuperNode SE Core Cabnt	NT9X01MB		1			AP
Message Switch Shelf Assy	NT9X0470		1	39		AP-01
Global -5V, 20A Pow. Conv.	NT9X31AB		2	39	01F, 33F	AP
Global +5V, 86A Pow. Conv.	NT9X30AB		2	39	04F, 36F	AP
T-Bus Terminator CP	NT9X49CC		2	39	07F, 32F	AP
Mapper CP	NT9X15AA		2	39	09F, 30F	AP
4-Port MS I/F CP	NT9X17AD		2	39	10F, 29F	RUL2
32-Port MS I/F CP	NT9X17BB		2	39	10F, 29F	RUL2
4-Port MS I/F CP	NT9X17AD		2	39	16F, 23F	AP
MS Processor CP	NT9X13NA		2	39	17F, 22F	AP
#Combined Clock CP	NT9X53AC		2	39	18F, 21F	RUL15
DMS-Bus System Clock CP	NT9X53AD		2	39	18F, 21F	RUL15
T-Bus Access CP	NT9X52AA		2	39	19F, 20F	AP
4-Link DS30 PB	NT9X23AA		2	39	10R, 29R	RUL2
16-Link DS30 PB	NT9X69BA		2	39	10R, 29R	RUL2
32-Port MS I/F CP	NT9X17BB		2	39	11F, 28F	RUL2
(for upto 3 LPPs, no JNET)						
16-Link DS30 PB	NT9X69BA		2	39	11R, 28R	RUL2
(for upto 3 LPPs, no JNET)						
DMS SNSE MS LIS/ENI I/F	NTZZ34CA		1	39		RUL1
F-BUS Cab Assy 3-shelf (LE)	NT9X7210		2	39		RUL1
F-BUS Cab Assy 3-shelf (RI)	NT9X7212		2	39		RUL1
F-BUS Cab Assy 2-shelf (LE)	NT9X7211		2	39		RUL1
F-BUS Cab Assy 2-shelf (RI)	NT9X7213		2	39		RUL1
DMS SNSE MS 8xDS30 I/F	NTZZ34JA		1	39		RUL2
DMS SNSE MS 32xDS30 I/F	NTZZ34DA		1	39		RUL2
MS Bulkhead Assembly (left)	NT9X6550		1	39		RUL2
(for non-Cab & Mer. Initial)						
MS Bulkhead Assembly (right)	NT9X6551		1	39		RUL2
(for non-Cab & Mer. Initial)						
DS30 Cable Assembly	NT9X0434			39		RUL2
(For non-Cabinetized appl.)						
DS30 Cable Assembly	NT9X0520			39		RUL2
(with 69BA for non-Cab appl)						
DS30 IML DS30 Cable Ass.	NT9X0475		2	39		RUL2
(Overhead appl.)						
DS30 IML DS30 Cable Ass.	NT9X0433		2	39		RUL2
(Raised Floor appl.)						
MS Bulkhead Assembly (left)	NT9X6560		1	39		RUL2
(Existing Meridian appl.)						
MS Bulkhead Assembly (right)	NT9X6561		1	39		RUL2
(Existing Meridian appl.)						
IML IOC0 Cable Assembly	NT9X0478		1	39		RUL2

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
(Existing Meridian appl.)						
IML IOC1 Cable Assembly	NT9X0479		1	39		RUL2
(Existing Meridian appl.)						
DS30 Cable Assembly	NT9X0474			39		RUL2
(with 23AA for exi. Mer.)						
DS30 Cable Assembly	NT9X0182			39		RUL2
(23AA in pairs, exi. Mer.)						
Cabinetized Bulkhead (left)	NT9X6567		1	39		RUL2
(Streamline Application)						
Cabinetized Bulkhead (right)	NT9X6568		1	39		RUL2
(Streamline Application)						
DS30 IML DS30 Cable Ass.	NT9X0489		2	39		RUL2
(Cab.appl., Overhead appl.)						
14 port DS30 cable assembly	NT9X0483			39		RUL2
6 port DS30 cable assembly	NT9X0487			39		RUL2
DS30 IML DS30 Cable Ass.	NT9X0488		2	39		RUL2
(Cab.appl., Raised Flr. appl.)						
IML IOC0 Cable Assembly	NT9X6544		1	39		RUL2
(Cabinetized Application)						
IML IOC1 Cable Assembly	NT9X6544		1	39		RUL2
(Cabinetized Application)						
Bulkhead Cover Plate	NTEX5070			39		RUL2
4-Port MS I/F CP	NT9X17AD		2	39	13F, 26F	RUL3
SR-512 Fiber Paddle Board	NT9X62BA		2	39	13R, 26R	RUL3
32-Port MS I/F CP	NT9X17BB		2	39	15F, 24F	RUL3
					14F, 25F	
DMS Bus 64 Port CP	NT9X17DA			39	15F, 24F	RUL3
					14F, 25F	
DMS Bus 128 Port CP	NT9X17CA			39	15F, 24F	RUL3
					14F, 25F	
2-Link SR512 PB	NT9X62CA			39	15R, 24R	RUL3
2-Link SR512 PB	NT9X62CA			39	14R, 25R	RUL3
2-Link SR512 PB	NT9X62CA		2	39	16R, 23R	AP
RTIF PB	NT9X26AB		2	39	17R, 22R	AP
Clock Interface PB	NT9X54AC		2	39	18R, 21R	AP
MS Clock Cable Assembly	NT9X0436		1	39		AP
MS Clock Cable Assembly	NT9X0437		1	39		AP
Cable Assembly	NT9X0438		4	39		AP
MS0-MS1 Cable Assembly	NTEX5026		1	39		AP
Filler Face Plate	NT9X19AA			39		RUL4
PB Filler Face Plate	NT9X19BA			39		RUL4
Design Label (NT9X17AD)	P0735096			39	10F, 29F	RUL12
Design Label (NT9X23AA)	P0678443			39	10R, 29R	RUL12
Design Label (NT9X17BB)	P0726962			39	10F, 29F	RUL12
Design Label (NT9X69BA)	P0726964			39	10R, 29R	RUL12
Design Label (NT9X17BB)	P0726962			39	15F, 24F	RUL12

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Design Label (NT9X17DA)	P0707891			39	14F, 25F 15F, 24F	RUL12
Design Label (NT9X17CA)	P0678441			39	14F, 25F 15F, 24F	RUL12
Design Label (NT9X62CA)	P0735105			39	14F, 25F 14R, 25R, 15R, 24R	RUL12
Shelf Strip, MS (rear, top)	P0739091		1	39		AP-01
Shelf Strip, MS (rear, bot)	P0739090		1	39		AP-01
MS Design. Strip (front)	P0739092		1	39		AP-01
MS Design. Strip (rear)	P0735784		1	39		AP-01

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Link Interface Shelf Assy	NT9X7204		1	26		AP
DMS SNSE LIS Common CP	NTZZ34LA		1	26	01F	RUL5
Filler Packfill	NT9X01FB		1	26		RUL5
Bulkhead Assembly	NT9X6534		2	26		RUL5
Cover Plate	NTEX5025		32	26		RUL5
F-Bus Extender PB	NT9X79AA		2	26	07R, 32R	RUL5
Design Label (NT9X79AA)	P0689621		2	26	07R, 32R	RUL5
F-Bus Ext with Term. PB	NT9X79BA		2	26	07R, 32R	RUL5
Design Label (NT9X79BA)	P0689622		2	26	07R, 32R	RUL5
CCS7 8 Meg LIU (E-DS0A)	NTZZ30UA			26	08F, 10F, 12F, 14F, 16F, 18F, 20F, 22F, 24F, 26F, 28F, 30F	RUL6
CCS7 8 Meg LIU (E/HC-DS0A)	NTZZ30VA			26	08F, 10F, 12F, 14F, 16F, 18F, 20F, 22F, 24F, 26F, 28F, 30F	RUL6
CCS7 8 Meg LIU (V.35)	NTZZ30WA			26	08F, 10F, 12F, 14F, 16F, 18F, 20F, 22F, 24F, 26F, 28F, 30F	RUL6
Filler Face Plate	NT9X19AA		26	26	07F-32F	RUL6
PB Filler Face Plate	NT9X19BA		26	26	07R-32R	RUL6
Shelf Strip LIS (rear, top)	P0739096			26		AP
Shelf Strip LIS (rear, bot)	P0739095			26		AP
Design.Strip LIS (front,top)	P0739097			26		AP
Shelf Strip LIS (front)	P0739094			26		AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
ENI Shelf Assembly	NT9X0810		1	13		AP
Filler Packfill	NT9X01FB		1	13		RUL7
Bulkhead Assembly (left)	NT9X6520		1	13		RUL7,9
Bulkhead Assembly (right)	NT9X6521		1	13		RUL7,9
Bulkhead Assembly (left)	NT9X6530		1	13		RUL7,9
Bulkhead Assembly (right)	NT9X6531		1	13		RUL7,9
Bulkhead Assembly	NT9X0813		2	13		RUL7,9
Streamline Bulkhead Assembly	NT9X8909		2	13		RUL7,9
DMS SNSE ENI F-Bus Common CP	NTZZ34GA		1	13		RUL8
CCS7 8 Meg LIU (E-DS0A)	NTZZ30UA			13	08F, 30F,	RUL8
CCS7 8 Meg LIU (E/HC-DS0A)	NTZZ30VA			13	08F, 30F,	RUL8
CCS7 8 Meg LIU (V.35)	NTZZ30WA			13	08F, 30F,	RUL8
DMS SNSE ENI Common CP	NTZZ34KA		1	13		RUL9
DMS SNSE 4K ENET	NTZZ34FA		1	13		RUL9
8K Crosspoint CP	NT9X35FA			13	14F-19F, 24F-29F	RUL9
4-Port DS512 Fiber I/F PB	NT9X40BB			13	14R-19R, 24R-29R	RUL9
16-Port DS30 PB	NT9X41BA			13	14R-19R, 24R-29R	RUL9
3-Port DS512 16-Port DS30 PB	NT9X45BA			13	14R-19R, 24R-29R	RUL9
Cable Assembly	NT9X0520			13		RUL9
Cable Assembly	NT9X0524			13		RUL9
Cable Assembly	NT9X0540			13		RUL9
Cable Assembly	NT9X0542			13		RUL9
Cable Assembly (Meridian)	NT9X0815			13		RUL9
Cable Assembly (Meridian)	NT9X0817			13		RUL9
Cable Assy (Streamline, XPM)	NT9X0546			13		RUL9
Cable Assy (Streamline, SLC)	NT9X0544			13		RUL9
Cable Assy (Streamline, XPM)	NT9X0547			13		RUL9
Cable Assy (Streamline, SLC)	NT9X0545			13		RUL9
Design Label (NT9X35FA)	P0735098			13	14F-19F, 24F-29F	RUL12
Design Label (NT9X40BB)	P0734155			13	14R-19R, 24R-29R	RUL12
Design Label (NT9X41BA)	P0704528			13	14R-19R, 24R-29R	RUL12
Design Label (NT9X45BA)	P0731527			13	14R-19R, 24R-29R	RUL12
Shelf Strip, ENI (front)	P0739099		1	13		AP-03
Shelf Strip, ENI (rear, bot)	P0739100		1	13		AP
Shelf Strip, ENI (rear, top)	P0739101		1	13		AP
Design Strip, ENI (front)	P0739102		1	13		AP
Design Strip, ENI (rear)	P0735786		1	13		AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Cmp Mod Sys Load Mod Sh Assy	NT9X0610		1	00		AP-01
+5V/+12V Power Conv	NT9X91AC		2	00	01F, 36F	AP
+5V/-5V Power Conv	NTDX15AB		2	00	04F, 33F	AP
System Load Module 1A	NT9X44AC		2	00	07F, 28F	AP
CPU Port CP	NT9X12AC		2	00	17F, 22F	AP
#Dual Port Msg Controller CP	NT9X86AA		2	00	18F, 21F	RUL15
Dual Port Msg Controller CP	NT9X86AB		2	00	18F, 21F	RUL15
CM Processor CP	NT9X13MB		2	00	19F, 20F	RUL10
Des. Labels(NT9X13MB)	P0737298		2	00	19F, 20F	RUL12
BRISC Processor CP	NT9X10AA		2	00	19F, 20F	RUL10
Des. Labels(NT9X10AA)	P0734152		2	00	19F, 20F	RUL12
Parallel Port Interface PB	NT9X46AA		4	00	07R, 17R 22R, 28R	AP
P-Bus Terminator PB	NT9X21AB		2	00	12R, 27R	AP
2-Link SR512 PB	NT9X62AA		2	00	18R, 21R	AP
RTIF PB for NT9X13MB	NT9X26AB		2	00	19R, 20R	RUL10
RTIF PB for BRISC	NT9X26DB		2	00	19R, 20R	RUL10
CM Extension Cable Assembly	NT9X0167		2	00		AP
E/W 2-25 Pin Cable Assembly	NT9X0160		2	00		AP
RS-232C/Curr Loop Cable Assy	NT9X0196		2	00		AP
Cable Assembly	A0379486		8	00		AP
96 Meg Memory CP	NT9X14EA			00	12F-16F, 23F-27F	RUL10
Design Label (NT9X14EA)	P0736863			00	12F-16F, 23F-27F	RUL12
Filler Face Plate	NT9X19AA			00		RUL4
PB Filler Face Plate	NT9X19BA			00		RUL4
ENET/W-CM Bulkhead Assembly	NT9X6552		2	00		RUL7,9
CM/SLM Bulkhead Assembly	NT9X6553		2	00		RUL7,9
CM Design. Strip (rear)	P0735782		1	00		AP-01
CM Design. Strip (rear,bot)	P0739105		1	00		AP-01
Shelf Strip, CM/SLM (rear,t)	P0739106		1	00		AP-01
Design Strip, CM/SLM (front)	P0739107		1	00		AP-01
Optical Fiber Label(German)	P0737638		4			AP
Terminal Block Desig. Strip	P0736058		1			RUL17
Cabinet Power Filter Label	P0736059		1			RUL18
Cabinet Mechanical Hardware						RUL13
End Panel Assy Kit (Brown)	NTRX07AE		2			RUL13
Frame Fail Lamp (Brown)	NT0X24BT		1			RUL13
Rear Frame Fail Lamp (Brown)	P0674502		1			RUL13
End Panel Assy Kit (Grey)	NTRX07AB		2			RUL13
Frame Fail Lamp (Grey)	NT0X24CN		1			RUL13
Rear Frame Fail Lamp (Grey)	P0699441		1			RUL13
Frame Sup.Panel (-60V)	NT9X03BA	FSP	1	52		AP
Cooling Unit (-60V)	NT9X95GU	CU	1	00		AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Stand-alone Power Cab. kit	NT9X9532		1			RUL14
Horizontal Power Cab.kit	NT9X9531		1			RUL14
EMI Contact Strips	P0714698		2			RUL14
C42 Cabinet Mechanical Assy	NT9X95BA					NOTE1

EQUIPMENT FLAGGED '##':

PEC	RATING	REPLACED BY PEC
NT9X91AB	A&M	NT9X91AC
NT9X31AA	A&M	NT9X31AB
NT9X30AA	A&M	NT9X30AB
NT9X86AA	PEND.	NT9X86AB
NT9X53AC	PEND.	NT9X53AD

DEV - DEVELOPMENT. These products are in the development phase.
Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if
they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufac-
tured and cannot be ordered.

NOTES:

- 1) Refer to NT9X95BA(EMA4-07-001) for additional mechanical
hardware requirements for C42 Cabinet.

RULES:

- AP 1) When PEC NTZZ34MC is ordered, these items are provided.
- AP-01 1) These items are provided with NT9X01MB and are listed here
for reference.
- AP-02 1) These items are provided with NT9X7204 and are listed here
for reference.

AP-03 1) These items are provided with NT9X0810 and are listed here for reference.

- RUL1
- 1) If ASUs are provisioned on either the LIS or ENI shelf, provide one (1) NTZZ34CA DMS SuperNode SE MS LIS/ENI Interface.
 - 2) To connect the F-BUS from the MS to the LIS shelf only, provide two (2) NT9X7211 F-BUS Cables (LE) and two (2) NT9X7213 F-BUS Cables (RI).
 - 3) To connect the F-BUS from the MS to the ENI and optional LIS, provide two (2) NT9X7210 F-BUS Cables (LE) and two (2) NT9X7212 F-BUS Cables (RI).
 - 4) If there are no ASUs in the LIS or ENI shelf, there is no need to extend the F-Bus from the MS down to the LIS or ENI shelves, in which case, do not order NTZZ34CA Building Block.
- RUL2
- 1) SuperNode SE supports up to six IOCs when configured for the LEC/IEC markets, and up to eight IOCs in the MTX markets. IOC 0, IOC 1, and 2 mandatory Inter-Message-Links (IML), must always be on slot 10 for plane 0 & slot 29 for plane 1.
 - 2) To provision Message Switch for up to two (2) IOCs, equip slots 10F and 29F with NT9X17AD (4 Port MS Interface card) port cards and 10R and 29R with NT9X23AA (4 Link DS-30 Paddle Boards).
 - 3) To provision Message Switch with more than two (2) IOCs and up to eight (8) IOCs, equip slots 10F and 29F with NT9X17BB (32 Port MS Interface card) port cards and 10R and 29R with NT9X69BA (16 Link DS-30 Paddle Boards).
 - 4) To provision Message Switch with up to three (3) LPPs, without JNET, equip slots 10F,11F and 29F,28F with NT9X17BB (32 Port MS Interface card) port cards and 10R,11R and 29R,28R with NT9X69BA (16 Link DS-30 Paddle Boards).
 - 5) The maximum number of JNET network modules that may be provisioned is seven (7) for LEC/IEC markets, except for MSL applications where the limit is ten (10). To support up to four (4) JNET network modules,without LPP, provision one (1) NTZZ34JA DMS SuperNode SE MS 8xDS30 Interface. To support up to ten (10) JNET network modules, and or up to three (3) LPPs, provision one (1) NTZZ34DA DMS SuperNode SE MS 32xDS30 Interface.
 - 6) Bulkheads MUST ALWAYS be job engineered on the MS shelf.

- 7) For Meridian initials which are not SNSE retrofit, and for non-Cabinetized applications, the NT9X6550 and NT9X6551 Bulkheads can be used, when NT9X23AA PBs are used in slots 10 thru 12 for Plane 0 and in slots 29 thru 27 for Plane 1.
- For non-Cabinetized and Meridian Initials, provision,
 - NT9X0434 DS30 Cable Assemblies for each 9X23AA provisioned.
 - NT9X0520 DS30 Cable Assemblies for each 9X69BA provisioned.
 - two (2) NT9X0475 IML DS30 Cable Assemblies (for overhead)

(OR)

- two (2) NT9X0433 IML DS30 Cable Assemblies(for raised floor)

Note that NT9X0434 cables are to be used only with NT9X23AA.

- 8) NT9X6560 and NT9X6561 bulkheads can be used when NT9X23AA PBs are used in slots 10 thru 14 for Plane 0 and in slots 29 thru 25 for Plane 1 for existing Meridian offices. Note that NT9X69BA cannot be used with NT9X6560 and 6561 bulkheads.
- For Existing Meridian applications, provision
 - one (1) NT9X0478 IML IOC0 Cable Assembly(right)
 - one (1) NT9X0479 IML IOC1 Cable Assemblies(left)
 - NT9X0474 DS30 Cable Assembly for each 9X23AA provisioned in slots 11 thru 14 for Plane 0 and in slots 28 thru 25 for Plane 1, only for IOCs.
 - NT9X0182 DS30 Cable Assemblies for each pair of 23AAs provisioned in slots 11 thru 14 for Plane 0 and in slots 28 thru 25 for Plane 1.
- 9) NT9X6567 and NT9X6568 bulkheads can be used when NT9X23AA/69BA PBs are used for Cabinetized(streamline) offices. Provision one (1) NTEX5070 cover plate for each unused cable positions in NT9X6567 and NT9X6558 bulkheads.
- For Streamline application provision,
 - one (1) NT9X6544 IML IOC0 Cable Assembly for 23AA in slot 10 for Plane 0.
 - one (1) NT9X6544 IML IOC1 Cable Assembly for 23AA in slot 29 for Plane 1.

(OR)

- one (1) NT9X0483 14 port Cable Assembly for 69BA in slot 10R for Plane 0.
- one (1) NT9X0487 6 port Cable Assembly for 69BA in slot 11R for Plane 0.
- one (1) NT9X0483 14 port Cable Assembly for 69BA in slot 29R for Plane 1.
- one (1) NT9X0487 6 port Cable Assembly for 69BA in slot 28R for Plane 1.

AND

- two (2) NT9X0489 IML DS30 Cable Assemblies (for overhead)
- two (2) NT9X0488 IML DS30 Cable Assemblies (for raised floor)

Note that JNET is NOT supported with SNSE in streamline application.

Connectors C0-C3;D0-D3;and E0-E3 in the NT9X6567/68 BHs are used for LPP 0, 1 and 2 respectively.

RUL3 1) Message Switch Configurations

The range of port cards and paddle boards that are supported by the SuperNode SE allows it to be configured with up to 8 Input/Output Controllers (IOC), 2 mandatory Inter-Message-Links (IML), up to 3 Link Peripheral Processors (LPP), and either a fully equipped 16K channel Enhanced Network (ENET) or up to 7 junctored Network Modules (JNET/NMs). Note that MSL Cabinet packaged systems can support upto 10 NMs. Where ENET 16K is used, the message switch also provides two slots for interfaces to Application/File Processors(AP/FP) and or Single Shelf LPPs (SSLPP or FLIS) external to the SNSE cabinet.

To Provision Message Switch for internal LIS interface, equip slots 8F and 31F with NT9X73BA (Rate Adapter CP) and 8R and 31R with NT9X79BA, F-Bus Extender Paddle Board.

		ENET	JNET	JNET
	MS SLOTS	MS P-side ports < than 256	1 - 4 Network Modules	5 - 7 Net. Mod. OR 10NMs for MSL appl.
2 IMLs 2 IOCs & 0 LPP & 1 FLIS	10 & 29 11 & 28 12 & 27 13 & 26 14 & 25 15 & 24	17AD/23AA 17AD/62BA *17DA/62CA 17DA/62CA	17AD/23AA 17AD/23AA 17AD/23AA 17AD/62BA	17AD/23AA 17BB/69BA 17BB/69BA 17AD/62BA
2 IMLs up to 8 IOcs & 0 LPPs	10 & 29 11 & 28 12 & 27 13 & 26 14 & 25 15 & 24	17BB/69BA *17DA/62CA 17DA/62CA	17BB/69BA 17AD/23AA 17AD/23AA	17BB/69BA 17BB/69BA 17BB/69BA
2 IMLs up to 8 IOcs & 3 LPPs	10 & 29 11 & 28 12 & 27 13 & 26 14 & 25 15 & 24	17BB/69BA 17BB/69BA *17DA/62CA 17DA/62CA	17BB/69BA 17BB/69BA 17BB/69BA	17BB/69BA 17BB/69BA 17BB/69BA

Note that the SuperNode SE can support either ENET or JNET configurations. It cannot support mixed ENET and JNET configurations, because JNET cannot interwork with ENET. Note that JNET is NOT supported with SNSE in streamline application.

* See the next table.

- 2) Use the following table to provide the circuit packs necessary for the required maximum number of MS and ENET ports.

The ENET interface provisioning is determined by the number of peripheral message channels required per ENET plane and is shown below.

P-side ports/ MS Plane	P-Side Peripheral Msg channels per ENET Pl.	slot 15 & 24		slot 14 & 25	
		Front Front	Rear Rear	Front Front	Rear Rear
				-	-
32 64	0 to 15 16 to 31	17BB 17BB	62CA 62CA	- 17BB	- 25BA
		OR			
64 96 128	16 to 31 32 to 47 48 to 63	17DA 17DA 17DA	62CA 62CA 62CA	17BB 17DA	25BA 25BA
		OR			
128 256	48 to 63 64 to 127	*17CA 17CA	62CA 62CA	*17CA	25BA

The circuit pack fill order is:

- 1) 15F/R (MS 0) and 24F/R (MS 1),
- 2) 14F/R (MS 0) and 25F/R (MS 1).

* The NT9X17CA is a 128 port card that has gained General Availability (GA) in BCS36.

If the number of message channels required for interfacing with ENET is less than or equal to 31, Provision one (1) NT9X17DA in slot 15.

If the number of message channels required for interfacing with ENET is less than or equal to 63, provide the NT9X17DA MS 64-Port CPs in two consecutive slots or one (1) NT9X17CA in slot 15.

If the number of message channels required for interfacing with ENET is less than or equal to 127, provide NT9X17CA MS 128-Port CPs in two consecutive slots. Note that NT9X62CA must always be provisioned in slots 15R and 14R for ALL scenario.

3) SR512 Ports

Slots 13 and 26 are always available for additional functionality (That is AP/FP/SSLPP).

To add FLIS provide, two (2) NT9X17AD and two (2) NT9X62BA. To add AP/FP provide, two (2) NT9X17DA and two (2) NT9X62BA.

- RUL4 1) Provision NT9X19AA Filler Face Plates and NT9X19BA Paddleboard Filler Face Plates for all unoccupied slots.

- RUL5 1) Provide one (1) NTZZ34LA DMS SNSE LIS Common CP in shelf position 26 if LIUs are to be provisioned for -60V applications.

If LIUs are equipped on the LIS and ENI shelves, provide:
two (2) NT9X79AA F-Bus Extender Paddleboards and,
two (2) NT9X79AA Des. Labels (P0689621).
These items extend the F-Bus on to the ENI shelf.

If LIUs are equipped on the LIS shelf only, provide:
two (2) NT9X79BA F-Bus Extender with BUS Termination PBs
two (2) NT9X79BA Des. Labels (P0689622).
The NT9X79BA terminate the F-Bus on the LIS shelf.

Provision one (1) NTEX5025 Cover Plate for each unused cable position on the NT9X6534 Bulkhead Assemblies. There are a total of 32 cable connector positions on the bulkheads, 16 on each side.

- 2) If ASU functionality is not required on the LIS shelf, provide one (1) NT9X01FB Filler Packfill, two (2) NT9X6534 LIS Bulkhead Assemblies, and thirty-two (32) NTEX5025 Cover Plates.

Bulkheads MUST ALWAYS be ordered on the LIS shelf, even if fillers are the only packs shipped with the SuperNode SE cabinet.

The NT9X01FB filler packfill contains:

- four (4) NT9X19CA Power Filler Face Plates,
- two (2) NT9X0314 FSP Shorting Plugs (B0225296),
- twenty-six (26) NT9X19AA Filler Face Plates and
- twenty-six (26) NT9X19BA Paddleboard Filler Face Plates,

- RUL6 1) A total of up to twelve (12) LIUs may be provisioned on the LIS. Provision any combination of:
NTZZ30UA CCS7 8 Meg LIU (E-DS0A)
NTZZ30VA CCS7 8 Meg LIU (E/HC-DS0A)
NTZZ30WA CCS7 8 Meg LIU (V.35)
- 2) Provide NT9X19AA Front Filler circuit packs and NT9X19BA Rear Filler paddleboards for all unequipped slots in the LIS shelf.

- RUL7 1) If ENET or LIU functionality is not required in the ENI shelf, and the cabinet is to be shipped with an empty ENI Shelf Assembly, provide one (1) NT9X01FB Filler Packfill, two (2) ENI bulkheads, and two (2) NT9X6553 CM/SLM bulkheads.

The NT9X01FB filler packfill contains:

- four (4) NT9X19CA Power Filler Face Plates,
- two (2) NT9X0314 FSP Shorting Plugs (B0225296),
- twenty-six (26) NT9X19AA Filler Face Plates and
- twenty-six (26) NT9X19BA Paddleboard Filler Face Plates,

Bulkheads MUST ALWAYS be provided on the ENI shelf, even if fillers are the only packs shipped in the ENI shelf.

Bulkheads MUST ALWAYS be provided on the CM/SLM shelf.

- 2) The ENI and CM/SLM bulkheads are provisioned as follows:

BULKHEAD PROVISIONING

The ENI bulkheads have different connectors for non-Cabinetized, Meridian as well as Streamline applications. The bulkhead NT9X6553 is the common CM/SLM bulkhead for Standard, Meridian and Streamline applications.

The NT9X6520/21 pair always requires the NT9X6553 CM/SLM bulkhead for 1 to 48 DS30 links. The NT9X6520/21 pair always requires the NT9X6552 CM/SLM bulkhead for 49 to 96 DS30 links.

Choose one of the bulkhead options listed below:

For standard applications without an SLC, with up to 48 DS30 links provision:

- one (1) NT9X6520 ENI Bulkhead Assembly (left),
- one (1) NT9X6521 ENI Bulkhead Assembly (right) and
- two (2) NT9X6553 CM/SLM Bulkhead Assemblies.

The NT9X6553 CM/SLM bulkheads have no DS30 connection capability.

For standard applications without an SLC, with more than 48 DS30 links, but less than or equal to 96 DS30 links provision:

- one (1) NT9X6520 ENI Bulkhead Assembly (left),
- one (1) NT9X6521 ENI Bulkhead Assembly (right) and
- two (2) NT9X6552 CM/SLM Bulkhead Assemblies

The NT9X6552 CM/SLM bulkheads have extra DS-30 connection capacity.

For standard applications with an SLC, and with more than 48 DS30 links, but less than or equal to 112 DS30 links provision:

one (1) NT9X6530 ENI Bulkhead Assembly (left),
one (1) NT9X6531 ENI Bulkhead Assembly (right) and
two (2) NT9X6553 CM/SLM Bulkhead Assemblies.

The CM bulkhead is required when the DS-30 channel capacity exceeds 48 DS-30s per ENET plane, without an SLC. Forty-eight DS-30s is the maximum connection capacity of a single NT9X6520/21 ENI bulkhead.

- 3) For Meridian applications, provision:
 - two (2) NT9X0813 Bulkhead Assemblies and
 - two (2) NT9X6553 CM/SLM Bulkhead Assemblies.
- 4) For Streamline applications, provision:
 - two (2) NT9X8909 Streamline Bulkhead Assemblies and
 - two (2) NT9X6553 CM/SLM Bulkhead Assemblies.

Note that, when using NT9X8909 ENI Bulkhead with Cabinetized TME without an SLC, only up to a maximum of 14 8-DS30 cables can be used.

- RUL8
- 1) If LIU functionality is required on the ENI shelf, and ENET has been provided, provision one (1) NTZZ34GA DMS SNSE ENI F-Bus Common CP.
 - 2) Provision any combination of:
 - NTZZ30UA CCS7 8 Meg LIU (E-DS0A),
 - NTZZ30VA CCS7 8 Meg LIU (E/HC-DS0A),
 - NTZZ30WA CCS7 8 Meg LIU (V.35)as required.

Note:

A total of up to two (2) LIUs may be provisioned on the ENI shelf.

The ENI shelf cannot support LIUs without the provisioning of an ENET. The reason for this restriction is that the ENET processor circuit packs control the power lock-out for the ENI shelf. If there are no ENET processor packs, there is no power supplied to the ENI shelf.

- RUL9
- 1) The minimum allowable ENET configuration is 4K, with 2K of the initial 4K channels assigned for messaging between the MS and the ENET. The ENET on SuperNode SE is only available in 4K, 8K, 12K and 16K configurations.

- 2) For a 4K ENET, provision one (1) NTZZ34FA DMS SNSE 4K ENET, one (1) NTZZ34KA DMS SNSE ENI Common CP and see item 6) below for cable provisioning requirements.

Provide front fillers (NT9X19AA) and paddleboard fillers (NT9X19BA) for all unprovisioned slots. All slots must be filled to ensure proper air flow for cooling.

- 3) For an 8K ENET, provision one (1) NTZZ34FA DMS SNSE 4K ENET, one (1) NTZZ34KA DMS SNSE ENI Common CP and four (4) NT9X35FA 8K Crosspoint Circuit Packs in slots 14F, 15F for Plane 0, and 24F and 25F for Plane 1.

Also provision any combination of NT9X40BB 4-Port DS512 Fiber Interface Paddleboards, NT9X41BA 16-Port DS30 Paddleboards and NT9X45BA 3-Port DS512 + 16-Port DS30 Paddleboards in slots 14R, 15R, 24R and 25R, provided that slots 14R and 24R have matching paddleboards and slots 15R and 25R also have matching paddleboards.

Also, see 6) below for cable provisioning requirements. Provide front fillers (NT9X19AA) and paddleboard fillers (NT9X19BA) for all unprovisioned slots. All slots must be filled to ensure proper air flow for cooling.

- 4) For a 12K ENET, provision one (1) NTZZ34FA DMS SNSE 4K ENET, one (1) NTZZ34KA DMS SNSE ENI Common CP, and eight (8) NT9X35FA 8K Crosspoint Circuit Packs in slots 14F to 17F for Plane 0 and 24F to 27F for Plane 1.

Also provision any combination of NT9X40BB 4 Port DS512 Fiber Interface Paddleboards, NT9X41BA 16-Port DS30 Paddleboards and NT9X45BA 3-Port DS512 16-Port DS30 Paddleboards in slots 14R to 17R and 24R to 27R, providing that matching paddleboards are used in each of the following pairs of slots:

14R and 24R; 15R and 25R;
16R and 26R; 17R and 27R.

The total number of NT9X41BA and NT9X45BA Paddleboards may not exceed four (4) per ENET plane for Meridian applications.

Also, see 6) below for cable provisioning requirements. Provide front fillers (NT9X19AA) and paddleboard fillers (NT9X19BA) for all unprovisioned slots. All slots must be filled to ensure proper air flow for cooling.

- 5) For a 16K ENET, provision one (1) NTZZ34FA DMS SNSE 4K ENET, one (1) NTZZ34KA DMS SNSE ENI Common CP and twelve

(12) NT9X35FA 8K Crosspoint Circuit Packs in slots 14F to 19F and 24F to 29F.

Also provision any combination of NT9X40BB 4-Port DS512 Fiber Interface Paddleboards, NT9X41BA 16-Port DS30 Paddleboards and NT9X45BA 3-Port DS512 16-Port DS30 Paddleboards in slots 14R to 19R and 24R to 29R, provided that matching paddleboards are used in each of the following pair of slots:

14R and 24R; 15R and 25R;
16R and 26R; 17R and 27R;
18R and 28R; 19R and 29R.

The total number of DS30 ports provided by the NT9X41BA and NT9X45BA Paddleboards may not exceed ninety-six (96) per ENET plane due to the limit of bulkhead cable connectors available to terminate DS30 links.

The total number of NT9X41BA and NT9X45BA Paddleboards may not exceed four (4) per ENET plane for Meridian applications.

The paddleboards in slots 19R and 29R can not be used for DS30 links if NT9X6520 and 6521 bulkheads are provisioned.

Also, see 6) below for cable provisioning requirements. Provide front fillers (NT9X19AA) and paddleboard fillers (NT9X19BA) for all unprovisioned slots. All slots must be filled to ensure proper air flow for cooling.

6) For Standard applications, provision:

one (1) NT9X0520 Cable Assembly per NT9X41BA and
one (1) NT9X0524 Cable Assembly per NT9X45BA
(if the NT9X41BA or NT9X45BA is in slot 17R or 18R and requires DS30 connections to the CM bulkhead in position 00, use NT9X0540 instead of NT9X0520 and NT9X0542 instead of NT9X0524).

for Meridian applications, provision:

one (1) NT9X0815 Cable Assembly per NT9X41BA and
one (1) NT9X0817 Cable Assembly per NT9X45BA.
for up to 64 DS-30s.

For Streamline applications, provision:

one (1) NT9X0546 Cable Assembly per NT9X41BA and
one (1) NT9X0547 Cable Assembly per NT9X45BA
(when an SLC is provided, use NT9X0544 instead of NT9X0546 and use NT9X0545 instead of NT9X0547).

Both of the above cabling scenarios for Streamline allow the termination of up to 112 DS-30 links.

Note:

The NT9X40BB only has fiber ports and fiber cables do not terminate on the bulkhead. The cables from this paddleboard go through a hole in the bulkhead and connect directly to the fiberized peripheral.

7) BULKHEAD PROVISIONING

The ENI bulkheads have different connectors for Standard, Meridian as well as Streamline applications. The bulkhead NT9X6553 is the common CM/SLM bulkhead for Standard, Meridian and Streamline applications.

The NT9X6520/21 pair always requires the NT9X6553 CM/SLM bulkhead for 1 to 48 DS30 links. The NT9X6520/21 pair always requires the NT9X6552 CM/SLM bulkhead for 49 to 96 DS30 links.

The ENI and CM/SLM bulkheads are provisioned as follows:
Choose one of the bulkhead options listed below:

For standard applications without an SLC, with up to 48 DS30 links provision:

one (1) NT9X6520 ENI Bulkhead Assembly (left),
one (1) NT9X6521 ENI Bulkhead Assembly (right) and
two (2) NT9X6553 CM/SLM Bulkhead Assemblies.

The NT9X6553 CM/SLM bulkheads have no DS30 connection capability.

For standard applications without an SLC, with more than 48 DS30 links, but less than or equal to 96 DS30 links provision:

one (1) NT9X6520 ENI Bulkhead Assembly (left),
one (1) NT9X6521 ENI Bulkhead Assembly (right) and
two (2) NT9X6552 CM/SLM Bulkhead Assemblies

The NT9X6552 CM/SLM bulkheads have extra DS-30 connection capacity.

For standard applications with an SLC, and with more than 48 DS30 links, but less than or equal to 112 DS30 links provision:

one (1) NT9X6530 ENI Bulkhead Assembly (left),
one (1) NT9X6531 ENI Bulkhead Assembly (right) and
two (2) NT9X6553 CM/SLM Bulkhead Assemblies.

The CM bulkhead is required when the DS-30 channel capacity exceeds 48 DS-30s per ENET plane, without an SLC. Forty-eight DS-30s is the maximum connection capacity of a single NT9X6520/21 ENI bulkhead.

- RUL10 1) For new jobs at BCS35 and higher, provide the NT9X13MB processor circuit boards. The NT9X13MB Processor provides ability to function with either NT9X14EA (96 Meg memory) or NT9X14DB (24 Meg memory), but not both. That is NT9X14DB and NT9X14EA WILL NOT be supported in a mixed configuration. Check availability prior to ordering NT9X14EA. The RTIF PB NT9X26AB will have to be provisioned with NT9X13MB processor.
- 2) The 96 Meg memory cards are the recommended option on SNSE initials from BCS35 onwards. The 24 Meg memory will only be available on SNSE extensions.
- 3) The NT9X14EA memory boards have the capability to function in burst mode. Burst mode memory is required to fully utilize the Series 60 BRISC processor (BRISC not available until BCS36). The new RTIF NT9X26DB will have to be provisioned with this BRISC processor. 4) The NT9X14DB 24Mb circuit boards are to be provided for memory extensions of existing offices at BCS34. Note that 24Mb circuit boards do not function in burst mode.
- 5) Provision memory circuit packs in pairs, in slots in the following order:
- 1) 16F and 23F;
 - 2) 15F and 24F;
 - 3) 14F and 25F;
 - 4) 13F and 26F;
 - 5) 12F and 27F.

The number of pairs to be provisioned depends on the memory requirement for the office.

RUL11 Deleted

RUL12 1) Provide designation labels as required.

RUL13 1) Provide mechanical hardware for the S/DMS cabinet, such as end guards, frame isolating pads and anchors by using the Engineering Manual inserts:

NT9X95BA - Mechanical Hardware for S/DMS Cabinet,
NTRX73 - Cabinetized DMS Cosmetic Endguards
and EMI Sidepanels.

- 2) Provision two (2) NTRX07AB End Panel Assy Kits (Grey), one (1) NT0X24CN Frame Fail Lamp (Grey) and one (1) P0699441 Rear Frame Fail Lamp for grey cabinets.

OR

- 3) Provision two (2) NTRX07AE End Panel Assy Kits (Brown), one (1) NT0X24BT Frame Fail Lamp (Brown) and one (1) P0674502 Rear Frame Fail Lamp for brown cabinets.
- 4) Provide one (1) NT9X03BA, Frame Supervisory Panel, per Cabinet for -60V powered installations.
- 5) Provide one (1) NT9X95GU, Cooling Unit, per cabinet for -60V powered installations. This unit comes with 3 replaceable blower assemblies(A0382103), and a replaceable electronics module(A0383326) installed. However, customers may desire spares. The Cooling Unit mounts immediately below position 00.

- RUL14 1) Provide one (1) NT9X9532 stand-alone Cabling Interface Kit when powering the NT9X01MB cabinet from the 7 foot PDC frame OR powering from the new CPDC (NTRX31CA) cabinet, OR powering from the NTRX31AA or from the NTRX31BA CPDC cabinet which is in the different lineup than the NT9X01MB. This kit includes cables, filters, and miscellaneous mounting hardware. Twenty-two (22) white boots are included in the NT9X9532 stand-alone Cabling Interface Kit.

Note: The twenty-two white boots MUST NOT be installed on the manufacturing shop floor. The boots must be shipped separately (loose) and installed at the job site.

- 2) Provide one (1) NT9X9531 Horizontal Power Cabling Interface Kit when powering the NT9X01MB cabinet from the NTRX31AA or from the NTRX31BA CPDC cabinet which is in the same lineup as the NT9X01MB. This kit includes power cables, terminal blocks, and miscellaneous mounting hardware.

Always provide:

two (2) EMI contact strips (P0714698)
when providing the NT9X9531 Horizontal Power Cabling Interface Kit.

- RUL15 1) Provide two (2) NT9X86AA Dual Port Message Controllers when the CM Processor (NT9X13MA or NT9X13MB) is provided.
- 2) Provide two (2) NT9X86AB Dual Port Message Controllers when the BRISC processor (NT9X10AA) is provided.

- RUL16 1) Provide one (1) P0736273 Optical Fiber Danger Label (English) per shelf when fiber paddleboards are provided.
- RUL17 1) Provide one (1) P0736058 Terminal Block Designation Strip per SNSE cabinet when powering the SNSE cabinet in a Streamline line up.
- RUL18 1) Provide one (1) P0736059 power filter label per SNSE cabinet when powering the SNSE cabinet in a non-Streamline line up or in a Stand alone application.

DMS SUPERNODE SE
ENI F-BUS COMMON CP

PEC CODE: NTZZ34GA

CPC CODE:

RATING: MD

REPLACES: Not Applicable

REPLACED BY: NTZZ34GB

ABBREVIATION NAME:

ENGINEERING DESCRIPTION: The DMS SuperNode SE ENI F-Bus Common CP
provides the components required to support
LIUS on the ENET shelf.

REFERENCE DOCUMENTATION: SLZZ34GA 00 04 REL 04

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA
Carrier
Wireless

ISSUE AUTHOR: NTI: Jerry Palmer Dept. 3471 (PPK)

MAIN CONTACT: NTI: Jerry Palmer Dept. 3471 (PPK)

NTZZ34GA EMC4-06-011 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 04 28	ECM 632 01	First issue of insert
92 09 29	ECM 632 02	Add Streamline information
92 11 02	ECM 632 03	Remove NT9X7210,12 cables from SL.
95 03 23	ECM 632 13	Retire this EM section.
95 11 08	ECM 632 16	Retire this EM section again, it was shown as active.

The DMS SuperNode SE ENI F-Bus Common CP is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
F-Bus Repeater CP	NT9X74CA		2	13	07F, 32F	AP
F-Bus Ext w Terminations PB	NT9X79BA		2	13	07R, 32R	AP
F-Bus B Terminator PB	NTEX20BA		1	13	08R	AP
F-Bus A Terminator PB	NTEX20AA		1	13	30R	AP
Design Label (NT9X79BA)	P0689622		2	13	07R, 32R	AP
Design Label (NTEX20BA)	P0704361		1	13	08R	AP
Design Label (NTEX20AA)	P0704360		1	13	30R	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

AP 1) When PEC NTZZ34GA is ordered, these items are provided.

DMS SUPERNODE SE LIS COMMON CP (-60V)

PEC CODE: NTZZ34LA

CPC CODE: B0237613

RATING: MD

REPLACES: Not Applicable

REPLACED BY: NTZZ34LB

ABBREVIATION NAME:

ENGINEERING DESCRIPTION: The DMS SuperNode SE LIS Common CP (-60V) provides the minimum components necessary for a functional link interface shelf with -60V power supplies.

REFERENCE DOCUMENTATION: SLZZ34LA 00 01
NTZZ34LA REL 01

MARKETS: Applicable markets:

Europe

ISSUE AUTHOR: NTI Jerry Palmer Dept. 3471 (PPK)

MAIN CONTACT: NTI Jerry Palmer Dept. 3471 (PPK)

NTZZ34LA EMC4-06-012 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 10 23	API 211 05	First issue of insert
93 04 07	API 211 07	This BB is for Germany only. Rules are removed and put in 34MA section.
93 08 10	ECM 632 06	NTZZ34LA is Standard in -60V appl.
95 03 23	ECM 632 13	Retire this EM section.
95 11 08	ECM 632 16	Retire this EM section again, it was shown as active.

The DMS SuperNode SE LIS Common CP (-60V) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
STP Filler Pack	NT9X19EA		2	26	01F, 33F	AP
+5V Power Converter	NT9X30AB		2	26	04F, 36F	AP
F-Bus Repeater CP	NT9X74CA		2	26	07F, 32F	AP
F-Bus B Terminator PB	NTEX20BA		1	26	08R	AP
F-Bus A Terminator PB	NTEX20AA		1	26	30R	AP
Bulkhead Assembly	NT9X6534		2	26		AP
Design Label (NT9X30AB)	P0737682		2	26	04F, 36F	AP
Design Label (NTEX20BA)	P0704361		1	26	08R	AP
Design Label (NTEX20AA)	P0704360		1	26	30R	AP
LIS Shelf Front Label	P0709179		1	26		AP
LIS Shelf Rear Label	P0709180		1	26		AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

AP 1) When PEC NTZZ34LA is ordered, these items are provided.

DMS SUPERNODE SE LIS COMMON CP (-60V)

PEC CODE: NTZZ34LB

CPC CODE: B0237613

RATING: Standard

REPLACES: NTZZ34LA

REPLACED BY: Not Applicable

ABBREVIATION NAME:

ENGINEERING DESCRIPTION: The DMS SuperNode SE LIS Common CP (-60V) provides the minimum components necessary for a functional link interface shelf with -60V power supplies.

REFERENCE DOCUMENTATION: SLZZ34LB 00 01
NTZZ34LB REL 01

MARKETS: Applicable markets:

Europe

ISSUE AUTHOR: NTC: Jerry Palmer Dept. 3471 (PPK)

MAIN CONTACT: NTC: Jerry Palmer Dept. 3471 (PPK)

NTZZ34LB EMC4-06-013 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 10 23	API 211 05	First issue of insert
93 04 07	API 211 07	This BB is for Germany only. Rules are removed and put in 34MA section.
93 08 10	ECM 632 06	NTZZ34LA is Standard in -60V appl.
94 09 26	ECM 632 11	NTZZ34LB introduces the NT9X74DA.
95 11 08	ECM 632 16	Retire section, duplicate to NTZZ34EB.

The DMS SuperNode SE LIS Common CP (-60V) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
STP Filler Pack	NT9X19EA		2	26	01F, 33F	AP
+5V Global Power Converter	NT9X30AB		2	26	04F, 36F	AP
#F-Bus Repeater CP	NT9X74DA		2	26	07F, 32F	AP
F-Bus B Terminator PB	NTEX20BA		1	26	08R	AP
F-Bus A Terminator PB	NTEX20AA		1	26	30R	AP
Bulkhead Assembly	NT9X6534		2	26		AP
Design Label (NT9X30AB)	P0737682		2	26	04F, 36F	AP
Design Label (NTEX20BA)	P0704361		1	26	08R	AP
Design Label (NTEX20AA)	P0704360		1	26	30R	AP
LIS Shelf Front Label	P0709179		1	26		AP
LIS Shelf Rear Label	P0709180		1	26		AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT9X74CA	A&M	NT9X74DA

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

AP 1) When PEC NTZZ34LB is ordered, these items are provided.

DMS SUPERNODE SE

PEC CODE: NTZZ34AF

CPC CODE:

| RATING: MD

REPLACES: NTZZ34AE

REPLACED BY: Not Applicable

ABBREVIATION NAME: SCC

ENGINEERING DESCRIPTION: The SNSE houses a Computing Module (CM), a System Load Module (SLM1A), a Message Switch (MS), an Enhanced Network (ENET) and a Link Interface Shelf (LIS).

REFERENCE DOCUMENTATION: SL9X01MB 01 13
SLZZ34AF 00 01
NTZZ34AF REL 01
MS9X01MB 01 15

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA
Carrier
Wireless

ISSUE AUTHOR: NTI: Jerry Palmer Dept. 3471 (PPK)

MAIN CONTACT: NTI: Jerry Palmer Dept. 3471 (PPK)

NTZZ34AF EMC4-06-014 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 10 01	API 211 09	Introduction of New BB NTZZ34AD.
94 02 22	API 211 10	Introduction of DMS Packet Handler.
94 03 10	API 211 11	Introduction of NT9X95BA.
94 06 16	API 211 12	Cancel entire API.
94 07 07	API 211 13	Introduce the Series 70 BRISC processor and associated RTIF.
94 09 26	ECM 632 11	Introduce the NT9X12AD CPU Port CP (ECD: 006-20777). The NT9X13MA processor is MD and replaced by the NT9X13MB processor.
94 11 22	ECM 632 12	Delete NT9X0193 cable from RUL6. Updated ENET interface provisioning table.
95 03 22	ECM 632 13	Added new LIU card, NTZZ30TB, ECD: 018-43880, Incorporated ET 20839, ET 21079 and ET 20689. Changed Rul3 for readability. Updated SE 70 and NT9X53AD availability. Incorporated ET 20779.
95 04 27	ECM 632 14	ECD: 018-44239 Changed NT9X77AA to NT9X77AB by using NTZZ30CM, replaces NTZZ30WA. ECD 018-43870 replaces NTZZ30UA with NTZZ30AM and NTZZ30VA with NTZZ30BM.
95 08 23	ECM 632 15	Add ESP Ground Term. Assy. for UK Market, ET 68563. Correct CPC for Optical Fiber Label, ET 22019. Define mounting locations for NIU per ECD 018-44497.
95 11 07	ECM 632 16	Upgraded ENET interface table per ECD 018-44830. Added to requirements for SLM III software. Removed Frame Fail Lamps per ECD 018-45801.
		Removed NTZZ30AM, NTZZ30BM, NTZZ30CM and NTZZ30TB from provisioning on the ENI shelf. ECD 018-46074.
		Update ENET interface table per MS and ET 114630. Add DS512 Fiber IML for AP/FP applications, ECD 018-44368. Add dual redundant power packs for LIS shelf per ECD 006-19337. Added Hardware/Software upgrades per ET32379

Engineering Manual Section Change History

DATE	DOCUMENT	REASON
96 01 05	ECM 632 17	Show spare EMI line filter as part of Stand-alone Power kit per ET 80303. Added NTZZ30EC, allows Ethernet Interface card provisioning per ECD 018-45721. Remove NTZZ44LA and NTZZ44MA, replaced by detail power converters and NTZZ34PB.
96 03 28	ECM 632 18	MD section, replaced by NTZZ34AH.

The DMS SuperNode SE is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
DMS SuperNode SE Core Cabnt	NT9X01MB		1			AP
Message Switch Shelf Assy	NT9X0470		1	39		AP-01
-5V Global Power Converter	NT9X31AB		2	39	01F, 33F	AP
+5V Global Power Converter	NT9X30AB		2	39	04F, 36F	AP
T-Bus Terminator CP	NT9X49CC		2	39	07F, 32F	AP
Mapper CP	NT9X15AA		2	39	09F, 30F	AP
4-Port MS I/F CP	NT9X17AD		2	39	10F, 29F	RUL2
32-Port MS I/F CP	NT9X17BB		2	39	10F, 29F	RUL2
4-Port MS I/F CP	NT9X17AD		2	39	16F, 23F	AP
MS Processor CP	NT9X13NA		2	39	17F, 22F	AP
#Combined Clock CP	NT9X53AC		2	39	18F, 21F	RUL11
DMS-Bus System Clock CP	NT9X53AD		2	39	18F, 21F	RUL11
T-Bus Access CP	NT9X52AA		2	39	19F, 20F	AP
4-Link DS30 PB	NT9X23AA		2	39	10R, 29R	RUL2
16-Link DS30 PB	NT9X69BA		2	39	10R, 29R	RUL2
32-Port MS I/F CP	NT9X17BB		2	39	11F, 28F	RUL2
(for up to 3 LPPs, no JNET)						
16-Link DS30 PB	NT9X69BA		2	39	11R, 28R	RUL2
(for up to 3 LPPs, no JNET)						
DMS SNSE MS LIS/ENI I/F	NTZZ34CA		1	39	8F	RUL1
F-BUS Cab Assy 3-shelf (LE)	NT9X7210		2	39		RUL1
F-BUS Cab Assy 3-shelf (RI)	NT9X7212		2	39		RUL1
F-BUS Cab Assy 2-shelf (LE)	NT9X7211		2	39		RUL1
F-BUS Cab Assy 2-shelf (RI)	NT9X7213		2	39		RUL1
DMS SNSE MS 8xDS30 I/F	NTZZ34JA		1	39	11F	RUL2
DMS SNSE MS 32xDS30 I/F	NTZZ34DA		1	39	11F	RUL2
MS Bulkhead Assembly (left)	NT9X6550		1	39		RUL2
(for non-Cab & Mer. Initial)						
MS Bulkhead Assembly (right)	NT9X6551		1	39		RUL2
(for non-Cab & Mer. Initial)						
DS30 Cable Assembly	NT9X0434			39		RUL2
(For non-Cabinetized appl.)						
DS30 Cable Assembly	NT9X0520			39		RUL2
(with 69BA for non-Cab appl)						
DS30 IML DS30 Cable Ass.	NT9X0475		2	39		RUL2
(Overhead appl.)						
DS30 IML DS30 Cable Ass.	NT9X0433		2	39		RUL2
(Raised Floor appl.)						
DS512 IML AP/FP Fiber Link	A0630023		2	39	13R, 26R	RUL2
MS Bulkhead Assembly (left)	NT9X6560		1	39		RUL2
(Existing Meridian appl.)						
MS Bulkhead Assembly (right)	NT9X6561		1	39		RUL2
(Existing Meridian appl.)						
IML IOC0 Cable Assembly	NT9X0478		1	39		RUL2

Retired Equipment
DMS SuperNode SE

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EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
(Existing Meridian appl.)						
IML IOC1 Cable Assembly	NT9X0479		1	39		RUL2
(Existing Meridian appl.)						
DS30 Cable Assembly	NT9X0474			39		RUL2
(with 23AA for exi. Mer.)						
DS30 Cable Assembly	NT9X0182			39		RUL2
(23AA in pairs, exi. Mer.)						
Cabinetized Bulkhead (left)	NT9X6567		1	39		RUL2
(Streamline Application)						
Cabinetized Bulkhead (right)	NT9X6568		1	39		RUL2
(Streamline Application)						
14 port DS30 cable assembly	NT9X0483			39		RUL2
6 port DS30 cable assembly	NT9X0487			39		RUL2
DS30 IML DS30 Cable Ass.	NT9X0489		2	39		RUL2
(Cab.appl., Overhead appl.)						
DS30 IML DS30 Cable Ass.	NT9X0488		2	39		RUL2
(Cab.appl., Raised Flr. appl.)						
IML IOC0 Cable Assembly	NT9X6544		1	39		RUL2
(Cabinetized Application)						
IML IOC1 Cable Assembly	NT9X6544		1	39		RUL2
(Cabinetized Application)						
Bulkhead Cover Plate	NTEX5070			39		RUL2
4-Port MS I/F CP	NT9X17AD		2	39	13F, 26F	RUL3
SR-512 Fiber Paddle Board	NT9X62BA		2	39	13R, 26R	RUL3
32-Port MS I/F CP	NT9X17BB		2	39	15F, 24F	RUL3
					14F, 25F	
DMS Bus 64 Port CP	NT9X17DA			39	15F, 24F	RUL3
					14F, 25F	
DMS Bus 128 Port CP	NT9X17CA			39	15F, 24F	RUL3
					14F, 25F	
2-Link SR512 PB	NT9X62CA			39	15R, 24R	RUL3
2-Link SR512 PB	NT9X62CA		2	39	14R, 25R	RUL3
MS Port Exp/Term PB	NT9X25BA		2	39	14R, 25R	RUL3
2-Link SR512 PB	NT9X62CA		2	39	16R, 23R	AP
RTIF PB	NT9X26AB		2	39	17R, 22R	AP
Clock Interface PB	NT9X54AC		2	39	18R, 21R	AP
MS Clock Cable Assembly	NT9X0436		1	39		AP
MS Clock Cable Assembly	NT9X0437		1	39		AP
Cable Assembly	NT9X0438		4	39		AP
MS0-MS1 Cable Assembly	NTEX5026		1	39		AP
Filler Face Plate	NT9X19AA			39		RUL4
PB Filler Face Plate	NT9X19BA			39		RUL4
Design Label (NT9X17AD)	P0735096			39	10F, 29F	RUL12
Design Label (NT9X23AA)	P0678443			39	10R, 29R	RUL12
Design Label (NT9X17BB)	P0726962			39	10F, 29F	RUL12
Design Label (NT9X69BA)	P0726964			39	10R, 29R	RUL12

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Design Label (NT9X17BB)	P0726962			39	15F, 24F 14F, 25F	RUL12
Design Label (NT9X17DA)	P0707891			39	15F, 24F 14F, 25F	RUL12
Design Label (NT9X17CA)	P0678441			39	15F, 24F 14F, 25F	RUL12
Design Label (NT9X62CA)	P0735105			39	15R, 24R 14R, 25R	RUL12
Design Label (NT9X25BA)	P0697531			39	14R, 25R	RUL12
Shelf Strip, MS (rear, top)	P0739091		1	39		AP-01
Shelf Strip, MS (rear, bot)	P0739090		1	39		AP-01
MS Design. Strip (front)	P0739092		1	39		AP-01
MS Design. Strip (rear)	P0735784		1	39		AP-01

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Link Interface Shelf Assy	NT9X7204		1	26		AP
Bulkhead Assembly	NT9X6534		2	26		AP
DMS SNSE LIS Common CP	NTZZ34EC		1	26		RUL5
STP Filler Pack	NT9X19EA		2	26	01F, 33F	RUL5
+5V Global Power Converter	NT9X30AB		2	26	04F, 36F	RUL5
Design Label (NT9X30AB)	P0738496		2	26	04F, 36F	RUL5
Redundant Power Converter	NTZZ34PB		1	26		RUL5
Filler Packfill	NT9X01FB		1	26		RUL5
Cover Plate	NTEX5025		32	26		RUL5
F-Bus Extender PB	NT9X79AA		2	26	07R, 32R	RUL5
Design Label (NT9X79AA)	P0689621		2	26	07R, 32R	RUL5
F-Bus Ext with Term. PB	NT9X79BA		2	26	07R, 32R	RUL5
Design Label (NT9X79BA)	P0689622		2	26	07R, 32R	RUL5
CCS7 8 Meg LIU (E-DS0A)	NTZZ30AM			26	08F, 10F, 12F, 14F, 16F, 18F, 20F, 22F, 24F, 26F, 28F, 30F	RUL6
CCS7 8 Meg LIU (E/HC-DS0A)	NTZZ30BM			26	08F, 10F, 12F, 14F, 16F, 18F, 20F, 22F, 24F, 26F, 28F, 30F	RUL6
CCS7 8 Meg LIU (V.35)	NTZZ30CM			26	08F, 10F, 12F, 14F, 16F, 18F, 24F, 26F, 28F, 30F	RUL6
NIU	NTZZ30MA			26	18F, 20F,	RUL6
XLIU	NTZZ30NA			26	08F, 10F, 12F, 14F, 16F, 18F, 24F, 26F, 28F, 30F	RUL6
CCS7 8 Meg LIU (E/HC-DS0A)	NTZZ30TB			26	08F, 10F, 12F, 14F, 16F, 18F, 20F, 22F, 24F, 26F, 28F, 30F	RUL6
Ethernet I/F Unit	NTZZ30EC			26	08F, 10F, 12F, 14F, 16F, 18F, 20F, 22F,	RUL6

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
					24F, 26F, 28F, 30F	
Filler Face Plate	NT9X19AA		26	26	07F-32F	RUL6
PB Filler Face Plate	NT9X19BA		26	26	07R-32R	RUL6
Shelf Strip LIS (rear, top)	P0739096		1	26		AP
Shelf Strip LIS (rear, bot)	P0739095		1	26		AP
Design.Strip LIS (rear)	P0709179		1	26		AP
Design.Strip LIS (front, top)	P0739097		1	26		AP
Shelf Strip LIS (front)	P0739094		1	26		AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
ENI Shelf Assembly	NT9X0810		1	13		AP
Filler Packfill	NT9X01FB		1	13		RUL7
Bulkhead Assembly (left)	NT9X6520		1	13		RUL7,9
Bulkhead Assembly (right)	NT9X6521		1	13		RUL7,9
Bulkhead Assembly (left)	NT9X6530		1	13		RUL7,9
Bulkhead Assembly (right)	NT9X6531		1	13		RUL7,9
Bulkhead Assembly	NT9X0813		2	13		RUL7,9
Streamline Bulkhead Assembly	NT9X8909		2	13		RUL7,9
DMS SNSE ENI F-Bus Common CP	NTZZ34GB		1	13	7F	RUL8
DMS SNSE ENI Common CP	NTZZ34BB		1	13	1F	RUL9
DMS SNSE 4K ENET	NTZZ34FA		1	13		RUL9
8K Crosspoint CP	NT9X35FA			13	14F-19F, 24F-29F	RUL9
4-Port DS512 Fiber I/F PB	NT9X40BB			13	14R-19R, 24R-29R	RUL9
16-Port DS30 PB	NT9X41BA			13	14R-19R, 24R-29R	RUL9
3-Port DS512 16-Port DS30 PB	NT9X45BA			13	14R-19R, 24R-29R	RUL9
Cable Assembly	NT9X0520			13		RUL9
Cable Assembly	NT9X0524			13		RUL9
Cable Assembly	NT9X0540			13		RUL9
Cable Assembly	NT9X0542			13		RUL9
Cable Assembly (Meridian)	NT9X0815			13		RUL9
Cable Assembly (Meridian)	NT9X0817			13		RUL9
Cable Assy (Streamline, XPM)	NT9X0546			13		RUL9
Cable Assy (Streamline, SLC)	NT9X0544			13		RUL9
Cable Assy (Streamline, XPM)	NT9X0547			13		RUL9
Cable Assy (Streamline, SLC)	NT9X0545			13		RUL9
Design Label (NT9X35FA)	P0735098			13	14F-19F, 24F-29F	RUL12
Design Label (NT9X40BB)	P0734155			13	14R-19R, 24R-29R	RUL12
Design Label (NT9X41BA)	P0704528			13	14R-19R, 24R-29R	RUL12
Design Label (NT9X45BA)	P0731527			13	14R-19R, 24R-29R	RUL12
Optical Fiber Label (English)	P0736273		1	13		RUL16
Shelf Strip, ENI (front)	P0739099		1	13		AP-03
Shelf Strip, ENI (rear, bot)	P0739100		1	13		AP
Shelf Strip, ENI (rear, top)	P0739101		1	13		AP
Design Strip, ENI (front)	P0739102		1	13		AP
Design Strip, ENI (rear)	P0735786		1	13		AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Cmp Mod Sys Load Mod Sh Assy	NT9X0610		1	00		AP-01
+5V/+12V Global Power Conv	NT9X91AC		2	00	01F, 36F	AP
+5V/-5V Global Power Conv	NTDX15AB		2	00	04F, 33F	AP
System Load Module 1A	NT9X44AC		2	00	07F, 28F	AP
#CPU Port CP	NT9X12AD		2	00	17F, 22F	AP
Des. Labels (NT9X12AD)	P0725905		2	00	17F, 22F	AP
#Dual Port Msg Controller CP	NT9X86AA		2	00	18F, 21F	RUL15
Des. Labels (NT9X86AA)	P0727367		2	00	18F, 21F	RUL15
Dual Port Msg Controller CP	NT9X86AB		2	00	18F, 21F	RUL15
Des. Labels (NT9X86AB)	P0749665		2	00	18F, 21F	RUL15
#CM Processor CP	NT9X13MA		2	00	19F, 20F	RUL10
CM Processor CP	NT9X13MB		2	00	19F, 20F	RUL10
Des. Labels (NT9X13MB)	P0737298		2	00	19F, 20F	RUL12
BRISC Processor (SE 60) CP	NT9X10AA		2	00	19F, 20F	RUL10
Des. Labels (NT9X10AA)	P0734152		2	00	19F, 20F	RUL12
#BRISC Processor (SE 70) CP	NT9X10BA		2	00	19F, 20F	RUL10
Des. Labels (NT9X10BA)	P0806211		2	00	19F, 20F	RUL12
Parallel Port Interface PB	NT9X46AA		4	00	07R, 17R	AP
					22R, 28R	
P-Bus Terminator PB	NT9X21AB		2	00	12R, 27R	AP
2-Link SR512 PB	NT9X62AA		2	00	18R, 21R	AP
RTIF PB for NT9X13MA & 13MB	NT9X26AB		2	00	19R, 20R	RUL10
Des. Labels (NT9X26AB)	P0705003		2	00	19R, 20R	RUL12
RTIF PB for SE 60	NT9X26DB		2	00	19R, 20R	RUL10
Des. Labels (NT9X26DB)	P0747896		2	00	19R, 20R	RUL12
#RTIF PB for SE 70	NT9X26EA		2	00	19R, 20R	RUL10
Des. Labels (NT9X26EA)	P0806223		2	00	19R, 20R	RUL12
CM Extension Cable Assembly	NT9X0167		2	00		AP
E/W 2-25 Pin Cable Assembly	NT9X0160		2	00		AP
RS-232C/Curr Loop Cable Assy	NT9X0196		2	00		AP
Cable Assembly	A0379486		8	00		AP
24 Meg Memory CP	NT9X14DB			00	12F-16F,	RUL10
					23F-27F	
Design Label (NT9X14DB)	P0700802			00	12F-16F,	RUL12
					23F-27F	
96 Meg Memory CP	NT9X14EA			00	12F-16F,	RUL10
					23F-27F	
Design Label (NT9X14EA)	P0736863			00	12F-16F,	RUL12
					23F-27F	
Filler Face Plate	NT9X19AA			00		RUL4
PB Filler Face Plate	NT9X19BA			00		RUL4
ENET/W-CM Bulkhead Assembly	NT9X6552		2	00		RUL7,9
CM/SLM Bulkhead Assembly	NT9X6553		2	00		RUL7,9
CM Design. Strip (rear)	P0735782		1	00		AP-01
CM Design. Strip (rear,bot)	P0739105		1	00		AP-01

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Shelf Strip, CM/SLM (rear,t)	P0739106		1	00		AP-01
Design Strip, CM/SLM (front)	P0739107		1	00		AP-01
Terminal Block Desig. Strip	P0736058		1			RUL17
Cabinet Power Filter Label	P0736059		1			RUL18
Cabinet Mechanical Hardware						RUL13
End Panel Assy Kit (Brown)	NTRX07AE		2			RUL13
End Panel Assy Kit (Grey)	NTRX07AB		2			RUL13
E-CORE Frame Supv Panel	NT9X03AA		1	52		RUL13
Cooling Unit (-48V)	NT9X95CU		1			RUL13
Stand-alone Power Cab. kit	NT9X9532		1			RUL14
Horizontal Power Cab. kit	NT9X9531		1			RUL14
EMI Contact Strips	P0714698		2			RUL14
ESP Ground Terminator Assy.	NT9X0324		1			RUL19
C42 Cabinet Mechanical Assy	NT9X95BA					Note2

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT9X86AA	PEND.	NT9X86AB
NT9X53AC	PEND.	NT9X53AD
NT9X12AC	MD	NT9X12AD
NT9X13MA	MD	NT9X13MB
NT9X10BA	DEV	
NT9X26EA	DEV	

DEV - DEVELOPMENT. These products are in the development phase.
Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if
they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufac-
tured and cannot be ordered.

NOTES:

- 1) Reserved
- 2) Refer to NT9X95BA (EMA4-07-001) for additional mechanical hardware requirements for C42 Cabinet.
- 3) Global Power Converters are configured for the Global Market, ie:, they will function with a -48V or -60V input.

RULES:

- AP 1) When PEC NTZZ34AF is ordered, these items are provided.
- AP-01 1) These items are provided with NT9X01MB and are listed here for reference.
- AP-02 1) These items are provided with NT9X7204 and are listed here for reference.
- AP-03 1) These items are provided with NT9X0810 and are listed here for reference.

- RUL1
- 1) If ASUs are provisioned on either the LIS or ENI shelf, provide one (1) NTZZ34CA DMS SuperNode SE MS LIS/ENI Interface.
 - 2) To connect the F-BUS from the MS to the LIS shelf only, provide two (2) NT9X7211 F-BUS Cables (LE) and two (2) NT9X7213 F-BUS Cables (RI).
 - 3) To connect the F-BUS from the MS to the ENI and optional LIS, provide two (2) NT9X7210 F-BUS Cables (LE) and two (2) NT9X7212 F-BUS Cables (RI).
 - 4) If there are no ASUs in the LIS or ENI shelf, there is no need to extend the F-Bus from the MS down to the LIS or ENI shelves, in which case, do not order NTZZ34CA Building Block.
- RUL2
- 1) SuperNode SE supports up to six IOCs when configured for the LEC/IEC markets, and up to eight IOCs in the MTX markets. IOC 0, IOC 1, and 2 mandatory Inter-Message-Links (IML), must always be on slot 10 for plane 0 & slot 29 for plane 1.
 - 2) To provision Message Switch for up to two (2) IOCs, equip slots 10F and 29F with NT9X17AD (4 Port MS Interface card) port cards and 10R and 29R with NT9X23AA (4 Link DS-30 Paddle Boards).
 - 3) To provision Message Switch with more than two (2) IOCs and up to eight (8) IOCs, equip slots 10F and 29F with NT9X17BB (32 Port MS Interface card) port cards and 10R and 29R with NT9X69BA (16 Link DS-30 Paddle Boards).
 - 4) To provision Message Switch with up to three (3) LPPs, without JNET, equip slots 10F,11F and 29F,28F with NT9X17BB (32 Port MS Interface card) port cards and 10R,11R and 29R,28R with NT9X69BA (16 Link DS-30 Paddle Boards).
 - 5) The maximum number of JNET network modules that may be provisioned is seven (7) for LEC/IEC markets, except for MSL applications where the limit is ten (10). To support up to four (4) JNET network modules,without LPP, provision one (1) NTZZ34JA DMS SuperNode SE MS 8xDS30 Interface. To support up to ten (10) JNET network modules, and or up to three (3) LPPs, provision one (1) NTZZ34DA DMS SuperNode SE MS 32xDS30 Interface.
 - 6) Bulkheads MUST ALWAYS be job engineered on the MS shelf.

- 7) For Meridian initials which are not SNSE retrofit, and for non-Cabinetized applications, the NT9X6550 and NT9X6551 Bulkheads can be used, when NT9X23AA PBs or NT9X69BA PBs are used in slots 10 thru 12 for Plane 0 and in slots 29 thru 27 for Plane 1.

- For non-Cabinetized and Meridian Initials, provision,
 - NT9X0434 DS30 Cable Assemblies for each 9X23AA provisioned.
 - NT9X0520 DS30 Cable Assemblies for each 9X69BA provisioned.
- Also provision one of the three following IML Cable or Fiber links:
 - two (2) NT9X0475 IML DS30 Cable Assemblies (for overhead)
 - two (2) NT9X0433 IML DS30 Cable Assemblies (for raised floor)
 - two (2) A0630023 IML DS512 Fiber links for FP Billing Server applications.

Note that NT9X0434 cables are to be used only with NT9X23AA.

- 8) NT9X6560 and NT9X6561 bulkheads can be used when NT9X23AA PBs are used in slots 10 thru 14 for Plane 0 and in slots 29 thru 25 for Plane 1 for existing Meridian offices. Note that NT9X69BA cannot be used with NT9X6560 and 6561 bulkheads.

- For Existing Meridian applications, provision
 - one (1) NT9X0478 IML IOC0 Cable Assembly(right)
 - one (1) NT9X0479 IML IOC1 Cable Assemblies(left)
 - NT9X0474 DS30 Cable Assembly for each 9X23AA provisioned in slots 11 thru 14 for Plane 0 and in slots 28 thru 25 for Plane 1, only for IOCs.
 - NT9X0182 DS30 Cable Assemblies for each pair of 23AAs provisioned in slots 11 thru 14 for Plane 0 and in slots 28 thru 25 for Plane 1.

- 9) NT9X6567 and NT9X6568 bulkheads can be used when NT9X23AA/69BA PBs are used for Cabinetized(streamline) offices. Provision one (1) NTEX5070 cover plate for each unused cable positions in NT9X6567 and NT9X6558 bulkheads.

- For Streamline application provision,
 - one (1) NT9X6544 IML IOC0 Cable Assembly for 23AA in slot 10 for Plane 0.
 - one (1) NT9X6544 IML IOC1 Cable Assembly for 23AA in slot 29 for Plane 1.

(OR)

- one (1) NT9X0483 14 port Cable Assembly for 69BA in slot 10R for Plane 0.
- one (1) NT9X0487 6 port Cable Assembly for 69BA in slot 11R for Plane 0.
- one (1) NT9X0483 14 port Cable Assembly for 69BA in slot 29R for Plane 1.
- one (1) NT9X0487 6 port Cable Assembly for 69BA in slot 28R for Plane 1.

AND

- two (2) NT9X0489 IML DS30 Cable Assemblies (for overhead)
- two (2) NT9X0488 IML DS30 Cable Assemblies (for raised floor)

Note that JNET is NOT supported with SNSE in streamline application.

Connectors C0-C3;D0-D3;and E0-E3 in the NT9X6567/68 BHs are used for LPP 0, 1 and 2 respectively.

RUL3 1) Message Switch Configurations

The range of port cards and paddle boards that are supported by the SuperNode SE allows it to be configured with up to 8 Input/Output Controllers (IOC), 2 mandatory Inter-Message-Links (IML), up to 3 Link Peripheral Processors (LPP), and either a fully equipped 16K channel Enhanced Network (ENET) or up to 7 junctored Network Modules (JNET/NMs). Note that MSL Cabinet packaged systems can support up to 10 NMs. Where ENET 16K is used, the message switch also provides two slots for interfaces to Application/File Processors(AP/FP) and or Single Shelf LPPs (SSLPP or FLIS) external to the SNSE cabinet.

To Provision Message Switch for internal LIS interface, equip slots 8F and 31F with NT9X73BA(Rate Adapter CP) and 8R and 31R with NT9X79BA, F-Bus Extender Paddle Board.

		ENET	JNET	JNET
	MS SLOTS	MS P-side ports < than 256	1 - 4 Network Modules	5 - 7 Net. Mod. OR 10NMs for MSL appl.
2 IMLs 2 IOCs & 0 LPP & 1 FLIS	10 & 29 11 & 28 12 & 27 13 & 26	17AD/23AA 17AD/62BA	17AD/23AA 17AD/23AA 17AD/23AA 17AD/62BA	17AD/23AA 17BB/69BA 17BB/69BA 17AD/62BA
2 IMLs up to 8 IOcs & 0 LPPs	10 & 29 11 & 28 12 & 27 13 & 26*	17BB/69BA	17BB/69BA 17AD/23AA 17AD/23AA	17BB/69BA 17BB/69BA 17BB/69BA
2 IMLs up to 8 IOcs & 3 LPPs	10 & 29 11 & 28 12 & 27 13 & 26*	17BB/69BA 17BB/69BA	17BB/69BA 17BB/69BA 17BB/69BA	17BB/69BA 17BB/69BA 17BB/69BA

Note that the SuperNode SE can support either ENET or JNET configurations. It cannot support mixed ENET and JNET configurations, because JNET cannot interwork with ENET.

* Slots 13 and 26 are for the FLIS interface and are shown in subrule 3 below.

- 2) Use the following table to provide the circuit packs necessary for the required maximum number of MS and ENET ports. Note that the single MS port card configuration for ENET are recommended at initial office deployment, and two card configurations for subsequent growth.

The ENET interface provisioning is determined by the number of peripheral message channels required per ENET plane and is shown below.

P-side ports/ MS Plane	P-Side Peripheral Msg channels per ENET Pl.	slot 15 & 24		slot 14 & 25	
		Front Front	Rear Rear	Front Front	Rear Rear
32	< or = 15	17BB	62CA	-	-
64	< or = 31	17BB 17DA	62CA 62CA	17BB -	62CA/25BA -
96	< or = 47	17DA	62CA	17BB	62CA/25BA
128	< or = 63	17DA 17CA	62CA 62CA	17DA -	62CA/25BA -
256	< or = 127	17CA	62CA	17CA	62CA/25BA

The circuit pack fill order is:

- 1) 15F/R (MS 0) and 24F/R (MS 1),
- 2) 14F/R (MS 0) and 25F/R (MS 1).

The NT9X17CA is a 128 port card that has attained General Availability (GA) in BCS36.

The NT9X25BA MS Port Expander with Terminations paddleboard can only be used for Message Port growth on

SNSE extensions. All initial jobs must use the NT9X62CA paddleboard.

3) SR512 Ports

Slots 13 and 26 are always available for additional functionality (That is AP/FP/SSLPP).

To add FLIS provide, two (2) NT9X17AD and two (2) NT9X62BA.
To add AP/FP provide, two (2) NT9X17AD and two (2) NT9X62BA.

- RUL4 1) Provision NT9X19AA Filler Face Plates and NT9X19BA Paddleboard Filler Face Plates for all unoccupied slots.

- RUL5 1) Provide one (1) NTZZ34EC DMS SNSE LIS Common CP in shelf position 26 if LIUs are to be provisioned.

If LIUs are equipped on the LIS and ENI shelves, provide:
two (2) NT9X79AA F-Bus Extender Paddleboards and,
two (2) NT9X79AA Des. Labels (P0689621).
These items extend the F-Bus on to the ENI shelf.

If LIUs are equipped on the LIS shelf only, provide:
two (2) NT9X79BA F-Bus Extender with BUS Termination PBs
two (2) NT9X79BA Des. Labels (P0689622).
The NT9X79BA terminate the F-Bus on the LIS shelf.

Provision one (1) NTEX5025 Cover Plate for each unused cable position on the NT9X6534 Bulkhead Assemblies. There are a total of 32 cable connector positions on the bulkheads, 16 on each side.

- 2) If ASU functionality is not required on the LIS shelf, provide one (1) NT9X01FB Filler Packfill and thirty-two (32) NTEX5025 Cover Plates. Note that the NT9X6534 BH is always provided with NTZZ34AD.

Bulkheads MUST ALWAYS be equipped on the LIS shelf, even if fillers are the only packs shipped with the SuperNode SE cabinet.

The NT9X01FB filler packfill contains:

- four (4) NT9X19CA Power Filler Face Plates,
- two (2) NT9X0314 FSP Shorting Plugs (B0225296),
- twenty-six (26) NT9X19AA Filler Face Plates and
- twenty-six (26) NT9X19BA Paddleboard Filler Face Plates,

- 3) Provide two (2) NT9X30AB Global Power Converters, two (2) STP Power Filler CP and two (2) Designation labels (P0738496) for standard applications,
or one (1) Redundant Power Converter (NTZZ34PB) when dual redundancy for the powering of the LIS shelf is required by the Customer.

RUL6 1) A total of up to twelve (12) ASUs may be provisioned on the LIS. Provision any combination of:
NTZZ30AM CCS7 8 Meg LIU (E-DS0A)
NTZZ30BM CCS7 8 Meg LIU (E/HC-DS0A)
NTZZ30CM CCS7 8 Meg LIU (V.35)
NTZZ30MA Network Interface Unit
NTZZ30NA X.25/X.75 Link Interface Unit
NTZZ30TB CCS7 8 Meg LIU (E/HC-DS0A/LFS)
NTZZ30EC Ethernet Interface Unit

2) Provide NT9X19AA Front Filler circuit packs and NT9X19BA Rear Filler paddleboards for all unequipped slots in the LIS shelf.

3) Provide one NTZZ30MA for each Network Interface Unit required. One NIU provides network interface capability for one complete LIS shelf (maximum of eight XLIUs).

4) Provide one NTZZ30NA for each X.25/X.75 Link Interface Unit required.

5) The LIS will support up to eight (8) DMS Packet Handler plus two (2) LIU7s per application. The LIS shelf can support up to a maximum of eight (8) DMS packet handler and two LIU7s.

Each DMS Packet Handler is composed of two circuit packs and one paddleboard. Note that LIS MUST be provisioned with NIUs to use the DMS Packet Handler configuration.

6) The LIS will support one pair of Network Interface Unit (NIU) and up to a maximum of ONE per SNSE Cabinet. The NIU can be located only in the center of the LIS shelf, and it is divided into two halves. Unit 0 for Plane 0 and Unit 1 for Plane 1 respectively. The NIU provides a connection from the LIS shelf to the network.

Each Network Interface Unit (NIU) is composed of two circuit packs and one paddleboard.

Refer to Figure below for Unit 0 and Unit 1. Also refer to NTZZ30MA BB section for ALWAYS PROVIDED circuit packs and paddle boards.

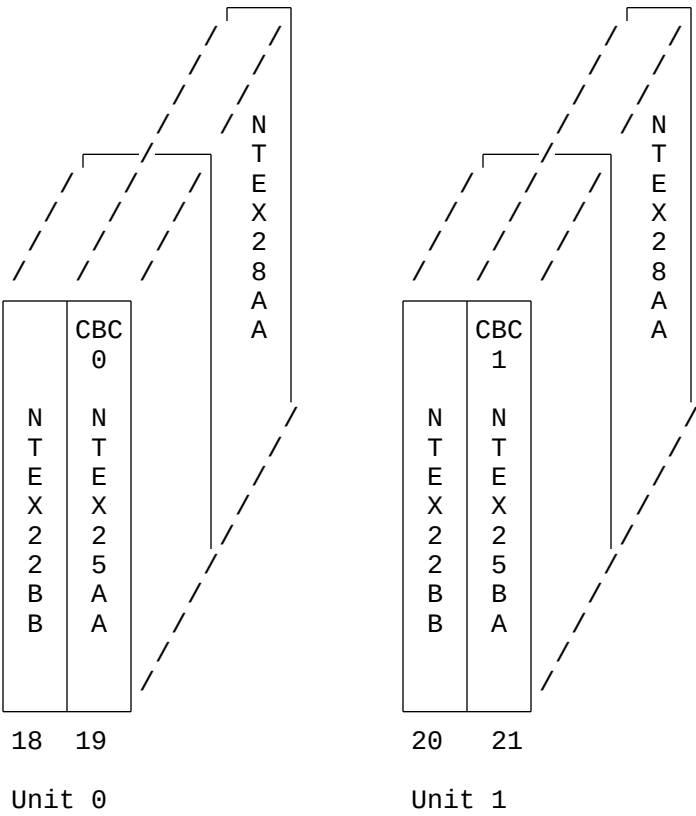


Figure NIU Unit 0 and Unit 1 Configuration.

- 7) Each DMS Packet Handler is composed of two circuit packs and one paddleboard. Note that LIS MUST be provisioned with NIUs to use the DMS Packet Handler configuration.

Refer to Figure below. Also refer to NTZZ30NA BB section for ALWAYS PROVIDED circuit packs and paddle boards.

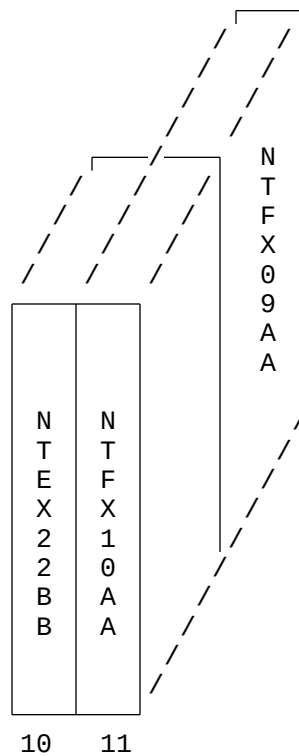


Figure DMS - Packet Handler Configuration

- 8) Provision one (1) P0675703 Rear Bottom Shelf ID Label per LIS provisioned.

Provision one (1) P0709181 LIU (two slot) Identification Label per LIU provisioned.

Provision one (1) P0704358 Designation Label per NT9X77AA provisioned.

Provision one (1) P0704359 Designation Label per NT9X78BA provisioned.

- 9) Provide one NTZZ30EC for each Ethernet interface required.

- RUL7 1) If ENET or LIU functionality is not required in the ENI shelf, and the cabinet is to be shipped with an empty ENI Shelf Assembly, provide one (1) NT9X01FB Filler Packfill, two (2) ENI bulkheads, and two (2) NT9X6553 CM/SLM bulkheads.

The NT9X01FB filler packfill contains:

- four (4) NT9X19CA Power Filler Face Plates,
- two (2) NT9X0314 FSP Shorting Plugs (B0225296),
- twenty-six (26) NT9X19AA Filler Face Plates and
- twenty-six (26) NT9X19BA Paddleboard Filler Face Plates,

Bulkheads MUST ALWAYS be provided on the ENI shelf, even if fillers are the only packs shipped in the ENI shelf.

Bulkheads MUST ALWAYS be provided on the CM/SLM shelf.

- 2) The ENI and CM/SLM bulkheads are provisioned as follows:

BULKHEAD PROVISIONING

The ENI bulkheads have different connectors for non-Cabinetized, Meridian as well as Streamline applications. The bulkhead NT9X6553 is the common CM/SLM bulkhead for Standard, Meridian and Streamline applications.

The NT9X6520/21 pair always requires the NT9X6553 CM/SLM bulkhead for 1 to 48 DS30 links. The NT9X6520/21 pair always requires the NT9X6552 CM/SLM bulkhead for 49 to 96 DS30 links.

Choose one of the bulkhead options listed below:

For standard applications without an SLC, with up to 48 DS30 links provision:

- one (1) NT9X6520 ENI Bulkhead Assembly (left),
- one (1) NT9X6521 ENI Bulkhead Assembly (right) and
- two (2) NT9X6553 CM/SLM Bulkhead Assemblies.

The NT9X6553 CM/SLM bulkheads have no DS30 connection capability.

For standard applications without an SLC, with more than 48 DS30 links, but less than or equal to 96 DS30 links provision:

- one (1) NT9X6520 ENI Bulkhead Assembly (left),
- one (1) NT9X6521 ENI Bulkhead Assembly (right) and
- two (2) NT9X6552 CM/SLM Bulkhead Assemblies

The NT9X6552 CM/SLM bulkheads have extra DS-30 connection capacity.

For standard applications with an SLC, and with more than 48 DS30 links, but less than or equal to 112 DS30 links provision:

one (1) NT9X6530 ENI Bulkhead Assembly (left),
one (1) NT9X6531 ENI Bulkhead Assembly (right) and
two (2) NT9X6553 CM/SLM Bulkhead Assemblies.

The CM bulkhead is required when the DS-30 channel capacity exceeds 48 DS-30s per ENET plane, without an SLC. Forty-eight DS-30s is the maximum connection capacity of a single NT9X6520/21 ENI bulkhead.

- 3) For Meridian applications, provision:
 - two (2) NT9X0813 Bulkhead Assemblies and
 - two (2) NT9X6553 CM/SLM Bulkhead Assemblies.
- 4) For Streamline applications, provision:
 - two (2) NT9X8909 Streamline Bulkhead Assemblies and
 - two (2) NT9X6553 CM/SLM Bulkhead Assemblies.

Provision one (1) NTEX5025 Cover Plate for each unused cable position on the NT9X8909 Bulkhead Assemblies. There are a total of 28 cable connector positions on the bulkheads, 14 on each side. Note that, when using NT9X8909 ENI Bulkhead with Cabinetized TME without an SLC, only a maximum of 14 8-DS30 cables can be used.

- RUL8
- 1) If LIU functionality is required on the ENI shelf, and ENET has been provided, provision one (1) NTZZ34GB DMS SNSE ENI F-Bus Common CP.
 - 2) Due to an incompatibility problem, NONE of the following BB may be ordered at this time. This problem applies only to the ENI shelf, these same BB may be used on the LIS shelf:
NTZZ30AM CCS7 8 Meg LIU (E-DS0A),
NTZZ30BM CCS7 8 Meg LIU (E/HC-DS0A),
NTZZ30CM CCS7 8 Meg LIU (V.35),
NTZZ30TB CCS7 8 Meg LIU (E/HC-DS0A/LFS)
NTZZ30EC Ethernet Interface Unit
as required.

Note:

A total of up to two (2) LIUs may be provisioned on the ENI shelf.

The ENI shelf cannot support LIUs without the provisioning of an ENET. The reason for this restriction is that the ENET processor circuit packs control the power lock-out for

the ENI shelf. If there are no ENET processor packs, there is no power supplied to the ENI shelf.

- RUL9 1) The minimum allowable ENET configuration is 4K, with 2K of the initial 4K channels assigned for messaging between the MS and the ENET. The ENET on SuperNode SE is only available in 4K, 8K, 12K and 16K configurations.

- 2) For a 4K ENET, provision one (1) NTZZ34FA DMS SNSE 4K ENET, one (1) NTZZ34BB DMS SNSE ENI Common CP and see item 6) below for cable provisioning requirements.

Provide front fillers (NT9X19AA) and paddleboard fillers (NT9X19BA) for all unprovisioned slots. All slots must be filled to ensure proper air flow for cooling.

- 3) For an 8K ENET, provision one (1) NTZZ34FA DMS SNSE 4K ENET, one (1) NTZZ34BA DMS SNSE ENI Common CP and four (4) NT9X35FA 8K Crosspoint Circuit Packs in slots 14F, 15F for Plane 0, and 24F and 25F for Plane 1.

Also provision any combination of NT9X40BB 4-Port DS512 Fiber Interface Paddleboards, NT9X41BA 16-Port DS30 Paddleboards and NT9X45BA 3-Port DS512 + 16-Port DS30 Paddleboards in slots 14R, 15R, 24R and 25R, provided that slots 14R and 24R have matching paddleboards and slots 15R and 25R also have matching paddleboards.

Also, see 6) below for cable provisioning requirements. Provide front fillers (NT9X19AA) and paddleboard fillers (NT9X19BA) for all unprovisioned slots. All slots must be filled to ensure proper air flow for cooling.

- 4) For a 12K ENET, provision one (1) NTZZ34FA DMS SNSE 4K ENET, one (1) NTZZ34BA DMS SNSE ENI Common CP, and eight (8) NT9X35FA 8K Crosspoint Circuit Packs in slots 14F to 17F for Plane 0 and 24F to 27F for Plane 1.

Also provision any combination of NT9X40BB 4 Port DS512 Fiber Interface Paddleboards, NT9X41BA 16-Port DS30 Paddleboards and NT9X45BA 3-Port DS512 16-Port DS30 Paddleboards in slots 14R to 17R and 24R to 27R, providing that matching paddleboards are used in each of the following pairs of slots:

14R and 24R; 15R and 25R;
16R and 26R; 17R and 27R.

The total number of NT9X41BA and NT9X45BA Paddleboards may not exceed four (4) per ENET plane for Meridian applications.

Also, see 6) below for cable provisioning requirements.

Provide front fillers (NT9X19AA) and paddleboard fillers (NT9X19BA) for all unprovisioned slots. All slots must be filled to ensure proper air flow for cooling.

- 5) For a 16K ENET, provision one (1) NTZZ34FA DMS SNSE 4K ENET, one (1) NTZZ34BA DMS SNSE ENI Common CP and twelve (12) NT9X35FA 8K Crosspoint Circuit Packs in slots 14F to 19F and 24F to 29F.

Also provision any combination of NT9X40BB 4-Port DS512 Fiber Interface Paddleboards, NT9X41BA 16-Port DS30 Paddleboards and NT9X45BA 3-Port DS512 16-Port DS30 Paddleboards in slots 14R to 19R and 24R to 29R, provided that matching paddleboards are used in each of the following pair of slots:

14R and 24R; 15R and 25R;
16R and 26R; 17R and 27R;
18R and 28R; 19R and 29R.

The total number of DS30 ports provided by the NT9X41BA and NT9X45BA Paddleboards may not exceed ninety-six (96) per ENET plane due to the limit of bulkhead cable connectors available to terminate DS30 links.

The total number of NT9X41BA and NT9X45BA Paddleboards may not exceed four (4) per ENET plane for Meridian applications.

The paddleboards in slots 19R and 29R can not be used for DS30 links if NT9X6520 and 6521 bulkheads are provisioned.

Also, see 6) below for cable provisioning requirements.

Provide front fillers (NT9X19AA) and paddleboard fillers (NT9X19BA) for all unprovisioned slots. All slots must be filled to ensure proper air flow for cooling.

- 6) For Standard applications, provision:

one (1) NT9X0520 Cable Assembly per NT9X41BA and
one (1) NT9X0524 Cable Assembly per NT9X45BA
(if the NT9X41BA or NT9X45BA is in slot 17R or 18R and requires DS30 connections to the CM bulkhead in position 00, use NT9X0540 instead of NT9X0520 and NT9X0542 instead of NT9X0524).

for Meridian applications, provision:

one (1) NT9X0815 Cable Assembly per NT9X41BA and
one (1) NT9X0817 Cable Assembly per NT9X45BA.

for up to 64 DS-30s.

For Streamline applications, provision:
one (1) NT9X0546 Cable Assembly per NT9X41BA and
one (1) NT9X0547 Cable Assembly per NT9X45BA
(when an SLC is provided, use NT9X0544 instead of NT9X0546
and use NT9X0545 instead of NT9X0547).
Both of the above cabling scenarios for Streamline allow
the termination of up to 112 DS-30 links.

Note:

The NT9X40BB only has fiber ports and fiber cables do not
terminate on the bulkhead. The cables from this paddleboard
go through a hole in the bulkhead and connect directly to
the fiberized peripheral.

7) BULKHEAD PROVISIONING

The ENI bulkheads have different connectors for Standard,
Meridian as well as Streamline applications. The bulkhead
NT9X6553 is the common CM/SLM bulkhead for Standard,
Meridian and Streamline applications.

The NT9X6520/21 pair always requires the NT9X6553 CM/SLM
bulkhead for 1 to 48 DS30 links. The NT9X6520/21 pair al-
ways requires the NT9X6552 CM/SLM bulkhead for 49 to 96
DS30 links.

The ENI and CM/SLM bulkheads are provisioned as follows:
Choose one of the bulkhead options listed below:

For standard applications without an SLC, with up to 48
DS30 links provision:

one (1) NT9X6520 ENI Bulkhead Assembly (left),
one (1) NT9X6521 ENI Bulkhead Assembly (right) and
two (2) NT9X6553 CM/SLM Bulkhead Assemblies.
The NT9X6553 CM/SLM bulkheads have no DS30 connection capa-
bility.

For standard applications without an SLC, with more than 48
DS30 links, but less than or equal to 96 DS30 links pro-
vision:

one (1) NT9X6520 ENI Bulkhead Assembly (left),
one (1) NT9X6521 ENI Bulkhead Assembly (right) and
two (2) NT9X6552 CM/SLM Bulkhead Assemblies
The NT9X6552 CM/SLM bulkheads have extra DS-30 connection
capacity.

For standard applications with an SLC, and with more than 48 DS30 links, but less than or equal to 112 DS30 links provision:

one (1) NT9X6530 ENI Bulkhead Assembly (left),
one (1) NT9X6531 ENI Bulkhead Assembly (right) and
two (2) NT9X6553 CM/SLM Bulkhead Assemblies.

The CM bulkhead is required when the DS-30 channel capacity exceeds 48 DS-30s per ENET plane, without an SLC. Forty-eight DS-30s is the maximum connection capacity of a single NT9X6520/21 ENI bulkhead.

- RUL10 1) Provide two NT9X13MA processors to support the CM section of the SuperNode SE. The NT9X13MA supports 24Mb memory only. The RTIF PB NT9X26AB will have to be provisioned with NT9X13MA processor. The NT9X13MA CP is now MD, and replaced by the NT9X13MB.
- 2) For new jobs at BCS35 and higher, provide the NT9X13MB processor circuit boards. The NT9X13MB Processor provides ability to function with either NT9X14EA (96 Meg memory) or NT9X14DB (24 Meg memory), but not both. That is NT9X14DB and NT9X14EA WILL NOT be supported in a mixed configuration. Check availability prior to ordering NT9X14EA. The RTIF PB NT9X26AB will have to be provisioned with NT9X13MB processor.
- 3) The NT9X14EA memory boards have the capability to function in burst mode. Burst mode memory is required to fully utilize the Series 60 BRISC processor. Order the SE 60 processor (NT9X10AA) if a higher capacity processor is required, BCS 36 or higher is required for base software. The NT9X26DB RTIF will have to be provisioned with this SE 60 BRISC processor.
- 4) The SE 70 BRISC processor may be ordered if a higher capacity processor is required. Also NA004 is required as base software. The RTIF required for the SE 70 is the NT9X26EA. If a SE 70 processor is required, and the office is at CSP04 or higher, SLM III is required. The SE 70 contains 256 MBytes of memory onboard, no memory cards are required if the combined PS/DS is less than 224 MBytes. SE 70 is available only with NPI approval.
- 5) Provision memory circuit packs in pairs, in slots in the following order:
- 1) 16F and 23F;
 - 2) 15F and 24F;
 - 3) 14F and 25F;
 - 4) 13F and 26F;
 - 5) 12F and 27F.

The number of pairs to be provisioned depends on the memory requirement for the office.

Processor	SE 20 NT9X13MA	SE 20 NT9X13MB	SE 60 NT9X10AA	SE 70 NT9X10BA
RTIF PB	NT9X26AB	NT9X26AB	NT9X26DB	NT9X26EA
Dual Port Msg	NT9X86AA	NT9X86AA	NT9X86AB	NT9X86AB
Memory	24 Meg. NT9X14DB	NT9X14DB OR NT9X14EA	96 Meg. NT9X14EA	96 Meg NT9X14EA
Port Card	NT9X12AC/ NT9X12AD	NT9X12AC/ NT9X12AD	NT9X12AD	NT9X12AD
Software Release	BCS 34	BCS 35	BCS 36	CSP004

Figure 1. SNSE BRISC 60 and 70 Upgrades

Refer to -- Heading id 'ENET632' unknown -- for BRISC upgrade requirements.

RUL11 1) The NT9X53AD is functionally compatible with NT9X54AC. However, the NT9X53AD is the recommended pack.

Note that, NT9X53AC is incompatible with BCS30 or older BCS's. NT9X53AD is incompatible with BCS36 or older BCS's. For Stratum 2 applications, provision the NT9X53AC instead of the NT9X53AD.

RUL12 1) Provide designation labels as required.

RUL13 1) Provide mechanical hardware for the S/DMS cabinet, such as end guards, frame isolating pads and anchors by using the Engineering Manual inserts:

NT9X95BA - Mechanical Hardware for S/DMS Cabinet,
NTRX73 - Cabinetized DMS Cosmetic Endguards
and EMI Sidepanels.

- 2) Provision two (2) NTRX07AB End Panel Assy Kits (Grey) for grey cabinets.

OR

- 3) Provision two (2) NTRX07AE End Panel Assy Kits (Brown) for brown cabinets.
- 4) For offices with -48 volt power convertors, provide one (1) E-CORE Frame Supv Panel (NT9X03AA) and one (1) Cooling Unit (-48V) (NT9X95CU). This unit comes with 3 replaceable blower assemblies (A0381714), one (1) MTM alarm card (A0383984), and one (1) relay (A0383985) installed. However customers may desire spares.

- RUL14
- 1) Provide one (1) NT9X9532 stand-alone Cabling Interface Kit when powering the NT9X01MB cabinet from the 7 foot PDC frame OR powering from the Model B CPDC (NTRX31CA) cabinet, OR powering from the NTRX31AA or from the NTRX31BA CPDC cabinet which is in the different lineup than the NT9X01MB. This kit includes cables, filters, and miscellaneous mounting hardware.

Customers may require a spare EMI line filter (A0326932) per office, this filter is part of the stand-alone interface kit.

Twenty-two (22) white boots are included in the NT9X9532 stand-alone Cabling Interface Kit.

Note: The twenty-two white boots MUST NOT be installed on the manufacturing shop floor. The boots must be shipped separately (loose) and installed at the job site.

- 2) Provide one (1) NT9X9531 Horizontal Power Cabling Interface Kit when powering the NT9X01MB cabinet from the NTRX31AA or from the NTRX31BA CPDC cabinet which is in the same lineup as the NT9X01MB. This kit includes power cables, terminal blocks, and miscellaneous mounting hardware.

Always provide:

two (2) EMI contact strips (P0714698)
when providing the NT9X9531 Horizontal Power Cabling Interface Kit.

- RUL15
- 1) Provide two (2) NT9X86AA Dual Port Message Controllers when the CM Processor (NT9X13MA or NT9X13MB) is provided.
 - 2) Provide two (2) NT9X86AB Dual Port Message Controllers when a BRISC processor (NT9X10AA/BA) is provided.

- RUL16 1) Provide one (1) P0736273 Optical Fiber Danger Label (English) per shelf when fiber paddleboards are provided.
- RUL17 1) Provide one (1) P0736058 Terminal Block Designation Strip per SNSE cabinet when powering the SNSE cabinet in a Streamline line up.
- RUL18 1) Provide one (1) P0736059 power filter label per SNSE cabinet when powering the SNSE cabinet in a non-Streamline line up or in a Stand alone application.
- RUL19 1) For all UK applications, provide one (1) NT9X0324 ESP Ground Terminator Assembly.

DMS SUPERNODE SE

PEC CODE: NTZZ34AG

CPC CODE: B0232997

| RATING: MD

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: SCC

ENGINEERING DESCRIPTION: The SNSE houses a Computing Module (CM), a System Load Module (SLM III), a Message Switch (MS), an Enhanced Network (ENET) and a Link Interface Shelf (LIS).

REFERENCE DOCUMENTATION: SL9X01MB 01 16
SLZZ34AF 00 01
NTZZ34AF REL 01
MS9X01MB 01 16

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA
Carrier
Wireless

ISSUE AUTHOR: NTI: Jerry Palmer Dept. 3471 (PPK)

MAIN CONTACT: NTI: Jerry Palmer Dept. 3471 (PPK)

NTZZ34AG EMC4-06-015 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
95 04 27	ECM 632 14	Initial Release of section. Introduce new SLM III subsystem in this BB.
95 08 23	ECM 632 15	Upgraded ENET interface table per ECD 018-44830. Added to requirements for SLM III software. Removed Frame Fail Lamps per ECD 018-45801. Added on-board memory info to SE 70 CPU.
95 11 07	ECM 632 16	Removed NTZZ30AM, NTZZ30BM, NTZZ30CM and NTZZ30TB from provisioning on the ENI shelf. ECD 018-46074. Update ENET interface table per MS and ET 114630. Add DS512 Fiber IML for AP/FP applications, ECD 018-44368. Add dual redundant power packs for LIS shelf per ECD 006-19337. Added Hardware/Software upgrades per ET32379. Show spare EMI line filter as part of Stand-alone Power kit per ET 80303.
96 01 05	ECM 632 17	Added NTZZ30EC, allows Ethernet Interface card provisioning per ECD 018-45721. Remove NTZZ44LA and NTZZ44MA, replaced by detail power converters and NTZZ34PB.
96 03 28	ECM 632 18	MD section, replaced by NTZZ34AH.

The DMS SuperNode SE is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
DMS SuperNode SE Core Cabnt	NT9X01MB		1			AP
Message Switch Shelf Assy	NT9X0470		1	39		AP-01
-5V Global Power Converter	NT9X31AB		2	39	01F, 33F	AP
+5V Global Power Converter	NT9X30AB		2	39	04F, 36F	AP
T-Bus Terminator CP	NT9X49CC		2	39	07F, 32F	AP
Mapper CP	NT9X15AA		2	39	09F, 30F	AP
4-Port MS I/F CP	NT9X17AD		2	39	10F, 29F	RUL2
32-Port MS I/F CP	NT9X17BB		2	39	10F, 29F	RUL2
4-Port MS I/F CP	NT9X17AD		2	39	16F, 23F	AP
MS Processor CP	NT9X13NA		2	39	17F, 22F	AP
#Combined Clock CP	NT9X53AC		2	39	18F, 21F	RUL11
DMS-Bus System Clock CP	NT9X53AD		2	39	18F, 21F	RUL11
T-Bus Access CP	NT9X52AA		2	39	19F, 20F	AP
4-Link DS30 PB	NT9X23AA		2	39	10R, 29R	RUL2
16-Link DS30 PB	NT9X69BA		2	39	10R, 29R	RUL2
32-Port MS I/F CP	NT9X17BB		2	39	11F, 28F	RUL2
(for up to 3 LPPs, no JNET)						
16-Link DS30 PB	NT9X69BA		2	39	11R, 28R	RUL2
(for up to 3 LPPs, no JNET)						
DMS SNSE MS LIS/ENI I/F	NTZZ34CA		1	39	8F	RUL1
F-BUS Cab Assy 3-shelf (LE)	NT9X7210		2	39		RUL1
F-BUS Cab Assy 3-shelf (RI)	NT9X7212		2	39		RUL1
F-BUS Cab Assy 2-shelf (LE)	NT9X7211		2	39		RUL1
F-BUS Cab Assy 2-shelf (RI)	NT9X7213		2	39		RUL1
DMS SNSE MS 8xDS30 I/F	NTZZ34JA		1	39	11F	RUL2
DMS SNSE MS 32xDS30 I/F	NTZZ34DA		1	39	11F	RUL2
MS Bulkhead Assembly (left)	NT9X6550		1	39		RUL2
(for non-Cab & Mer. Initial)						
MS Bulkhead Assembly (right)	NT9X6551		1	39		RUL2
(for non-Cab & Mer. Initial)						
DS30 Cable Assembly	NT9X0434			39		RUL2
(For non-Cabinetized appl.)						
DS30 Cable Assembly	NT9X0520			39		RUL2
(with 69BA for non-Cab appl)						
DS30 IML DS30 Cable Ass.	NT9X0475		2	39		RUL2
(Overhead appl.)						
DS30 IML DS30 Cable Ass.	NT9X0433		2	39		RUL2
(Raised Floor appl.)						
DS512 IML AP/FP Fiber Link	A0630023		2	39	13R, 26R	RUL2
MS Bulkhead Assembly (left)	NT9X6560		1	39		RUL2
(Existing Meridian appl.)						
MS Bulkhead Assembly (right)	NT9X6561		1	39		RUL2
(Existing Meridian appl.)						
IML IOC0 Cable Assembly	NT9X0478		1	39		RUL2

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DMS SuperNode SE

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EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
(Existing Meridian appl.)						
IML IOC1 Cable Assembly	NT9X0479		1	39		RUL2
(Existing Meridian appl.)						
DS30 Cable Assembly	NT9X0474			39		RUL2
(with 23AA for exi. Mer.)						
DS30 Cable Assembly	NT9X0182			39		RUL2
(23AA in pairs, exi. Mer.)						
Cabinetized Bulkhead (left)	NT9X6567		1	39		RUL2
(Streamline Application)						
Cabinetized Bulkhead (right)	NT9X6568		1	39		RUL2
(Streamline Application)						
14 port DS30 cable assembly	NT9X0483			39		RUL2
6 port DS30 cable assembly	NT9X0487			39		RUL2
DS30 IML DS30 Cable Ass.	NT9X0489		2	39		RUL2
(Cab.appl., Overhead appl.)						
DS30 IML DS30 Cable Ass.	NT9X0488		2	39		RUL2
(Cab.appl., Raised Flr. appl.)						
IML IOC0 Cable Assembly	NT9X6544		1	39		RUL2
(Cabinetized Application)						
IML IOC1 Cable Assembly	NT9X6544		1	39		RUL2
(Cabinetized Application)						
Bulkhead Cover Plate	NTEX5070			39		RUL2
4-Port MS I/F CP	NT9X17AD		2	39	13F, 26F	RUL3
SR-512 Fiber Paddle Board	NT9X62BA		2	39	13R, 26R	RUL3
32-Port MS I/F CP	NT9X17BB		2	39	15F, 24F	RUL3
					14F, 25F	
DMS Bus 64 Port CP	NT9X17DA			39	15F, 24F	RUL3
					14F, 25F	
DMS Bus 128 Port CP	NT9X17CA			39	15F, 24F	RUL3
					14F, 25F	
2-Link SR512 PB	NT9X62CA			39	15R, 24R	RUL3
2-Link SR512 PB	NT9X62CA		2	39	14R, 25R	RUL3
2-Link SR512 PB	NT9X62CA		2	39	16R, 23R	AP
RTIF PB	NT9X26AB		2	39	17R, 22R	AP
Clock Interface PB	NT9X54AC		2	39	18R, 21R	AP
MS Clock Cable Assembly	NT9X0436		1	39		AP
MS Clock Cable Assembly	NT9X0437		1	39		AP
Cable Assembly	NT9X0438		4	39		AP
MS0-MS1 Cable Assembly	NTEX5026		1	39		AP
Filler Face Plate	NT9X19AA			39		RUL4
PB Filler Face Plate	NT9X19BA			39		RUL4
Design Label (NT9X17AD)	P0735096			39	10F, 29F	RUL12
Design Label (NT9X23AA)	P0678443			39	10R, 29R	RUL12
Design Label (NT9X17BB)	P0726962			39	10F, 29F	RUL12
Design Label (NT9X69BA)	P0726964			39	10R, 29R	RUL12
Design Label (NT9X17BB)	P0726962			39	15F, 24F	RUL12

Retired Equipment
DMS SuperNode SE

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EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Design Label (NT9X17DA)	P0707891			39	14F, 25F 15F, 24F	RUL12
Design Label (NT9X17CA)	P0678441			39	14F, 25F 15F, 24F	RUL12
Design Label (NT9X62CA)	P0735105			39	14F, 25F 15R, 24R 14R, 25R	RUL12
Shelf Strip, MS (rear, top)	P0739091		1	39		AP-01
Shelf Strip, MS (rear, bot)	P0739090		1	39		AP-01
MS Design. Strip (front)	P0739092		1	39		AP-01
MS Design. Strip (rear)	P0735784		1	39		AP-01

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Link Interface Shelf Assy	NT9X7204		1	26		AP
Bulkhead Assembly	NT9X6534		2	26		AP
DMS SNSE LIS Common CP	NTZZ34EC		1	26		RUL5
STP Filler Pack	NT9X19EA		2	26	01F, 33F	RUL5
+5V Global Power Converter	NT9X30AB		2	26	04F, 36F	RUL5
Design Label (NT9X30AB)	P0738496		2	26	04F, 36F	RUL5
Redundant Power Converter	NTZZ34PB		1	26		RUL5
Filler Packfill	NT9X01FB		1	26		RUL5
Cover Plate	NTEX5025		32	26		RUL5
F-Bus Extender PB	NT9X79AA		2	26	07R, 32R	RUL5
Design Label (NT9X79AA)	P0689621		2	26	07R, 32R	RUL5
F-Bus Ext with Term. PB	NT9X79BA		2	26	07R, 32R	RUL5
Design Label (NT9X79BA)	P0689622		2	26	07R, 32R	RUL5
CCS7 8 Meg LIU (E-DS0A)	NTZZ30AM			26	08F, 10F, 12F, 14F, 16F, 18F, 20F, 22F, 24F, 26F, 28F, 30F	RUL6
CCS7 8 Meg LIU (E/HC-DS0A)	NTZZ30BM			26	08F, 10F, 12F, 14F, 16F, 18F, 20F, 22F, 24F, 26F, 28F, 30F	RUL6
CCS7 8 Meg LIU (V.35)	NTZZ30CM			26	08F, 10F, 12F, 14F, 16F, 18F, 24F, 26F, 28F, 30F	RUL6
NIU	NTZZ30MA			26	18F, 20F,	RUL6
XLIU	NTZZ30NA			26	08F, 10F, 12F, 14F, 16F, 18F, 24F, 26F, 28F, 30F	RUL6
CCS7 8 Meg LIU (E/HC-DS0A)	NTZZ30TB			26	08F, 10F, 12F, 14F, 16F, 18F, 20F, 22F, 24F, 26F, 28F, 30F	RUL6
Ethernet I/F Unit	NTZZ30EC			26	08F, 10F, 12F, 14F, 16F, 18F, 20F, 22F,	RUL6

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
					24F, 26F, 28F, 30F	
Filler Face Plate	NT9X19AA		26	26	07F-32F	RUL6
PB Filler Face Plate	NT9X19BA		26	26	07R-32R	RUL6
Shelf Strip LIS (rear, top)	P0739096		1	26		AP
Shelf Strip LIS (rear, bot)	P0739095		1	26		AP
Design.Strip LIS (rear)	P0709179		1	26		AP
Design.Strip LIS (front, top)	P0739097		1	26		AP
Shelf Strip LIS (front)	P0739094		1	26		AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
ENI Shelf Assembly	NT9X0810		1	13		AP
Filler Packfill	NT9X01FB		1	13		RUL7
Bulkhead Assembly (left)	NT9X6520		1	13		RUL7,9
Bulkhead Assembly (right)	NT9X6521		1	13		RUL7,9
Bulkhead Assembly (left)	NT9X6530		1	13		RUL7,9
Bulkhead Assembly (right)	NT9X6531		1	13		RUL7,9
Bulkhead Assembly	NT9X0813		2	13		RUL7,9
Streamline Bulkhead Assembly	NT9X8909		2	13		RUL7,9
DMS SNSE ENI F-Bus Common CP	NTZZ34GB		1	13	7F	RUL8
DMS SNSE ENI Common CP	NTZZ34BB		1	13	1F	RUL9
DMS SNSE 4K ENET	NTZZ34FA		1	13		RUL9
8K Crosspoint CP	NT9X35FA			13	14F-19F, 24F-29F	RUL9
4-Port DS512 Fiber I/F PB	NT9X40BB			13	14R-19R, 24R-29R	RUL9
16-Port DS30 PB	NT9X41BA			13	14R-19R, 24R-29R	RUL9
3-Port DS512 16-Port DS30 PB	NT9X45BA			13	14R-19R, 24R-29R	RUL9
Cable Assembly	NT9X0520			13		RUL9
Cable Assembly	NT9X0524			13		RUL9
Cable Assembly	NT9X0540			13		RUL9
Cable Assembly	NT9X0542			13		RUL9
Cable Assembly (Meridian)	NT9X0815			13		RUL9
Cable Assembly (Meridian)	NT9X0817			13		RUL9
Cable Assy (Streamline, XPM)	NT9X0546			13		RUL9
Cable Assy (Streamline, SLC)	NT9X0544			13		RUL9
Cable Assy (Streamline, XPM)	NT9X0547			13		RUL9
Cable Assy (Streamline, SLC)	NT9X0545			13		RUL9
Design Label (NT9X35FA)	P0735098			13	14F-19F, 24F-29F	RUL12
Design Label (NT9X40BB)	P0734155			13	14R-19R, 24R-29R	RUL12
Design Label (NT9X41BA)	P0704528			13	14R-19R, 24R-29R	RUL12
Design Label (NT9X45BA)	P0731527			13	14R-19R, 24R-29R	RUL12
Optical Fiber Label (English)	P0736273		1	13		RUL16
Shelf Strip, ENI (front)	P0739099		1	13		AP-03
Shelf Strip, ENI (rear, bot)	P0739100		1	13		AP
Shelf Strip, ENI (rear, top)	P0739101		1	13		AP
Design Strip, ENI (front)	P0739102		1	13		AP
Design Strip, ENI (rear)	P0735786		1	13		AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Cmp Mod Sys Load Mod Sh Assy	NT9X0610		1	00		AP-01
+5V/+12V Global Power Conv	NT9X91AC		2	00	01F, 36F	AP
+5V/-5V Global Power Conv	NTDX15AB		2	00	04F, 33F	AP
System Load Module III	NT9X44AD		2	00	07F, 28F	AP
#CPU Port CP	NT9X12AD		2	00	17F, 22F	AP
Des. Labels (NT9X12AD)	P0725905		2	00	17F, 22F	AP
#Dual Port Msg Controller CP	NT9X86AA		2	00	18F, 21F	RUL15
Des. Labels (NT9X86AA)	P0727367		2	00	18F, 21F	RUL15
Dual Port Msg Controller CP	NT9X86AB		2	00	18F, 21F	RUL15
Des. Labels (NT9X86AB)	P0749665		2	00	18F, 21F	RUL15
#CM Processor CP	NT9X13MA		2	00	19F, 20F	RUL10
CM Processor CP	NT9X13MB		2	00	19F, 20F	RUL10
Des. Labels (NT9X13MB)	P0737298		2	00	19F, 20F	RUL12
BRISC Processor (SE 60) CP	NT9X10AA		2	00	19F, 20F	RUL10
Des. Labels (NT9X10AA)	P0734152		2	00	19F, 20F	RUL12
#BRISC Processor (SE 70) CP	NT9X10BA		2	00	19F, 20F	RUL10
Des. Labels (NT9X10BA)	P0806211		2	00	19F, 20F	RUL12
Parallel Port Interface PB	NT9X46AA		4	00	07R, 17R	AP
					22R, 28R	
P-Bus Terminator PB	NT9X21AB		2	00	12R, 27R	AP
2-Link SR512 PB	NT9X62AA		2	00	18R, 21R	AP
RTIF PB for NT9X13MA & 13MB	NT9X26AB		2	00	19R, 20R	RUL10
Des. Labels (NT9X26AB)	P0705003		2	00	19R, 20R	RUL12
RTIF PB for SE 60	NT9X26DB		2	00	19R, 20R	RUL10
Des. Labels (NT9X26DB)	P0747896		2	00	19R, 20R	RUL12
#RTIF PB for SE 70	NT9X26EA		2	00	19R, 20R	RUL10
Des. Labels (NT9X26EA)	P0806223		2	00	19R, 20R	RUL12
CM Extension Cable Assembly	NT9X0167		2	00		AP
E/W 2-25 Pin Cable Assembly	NT9X0160		2	00		AP
RS-232C/Curr Loop Cable Assy	NT9X0196		2	00		AP
Cable Assembly	A0379486		8	00		AP
24 Meg Memory CP	NT9X14DB			00	12F-16F,	RUL10
					23F-27F	
Design Label (NT9X14DB)	P0700802			00	12F-16F,	RUL12
					23F-27F	
96 Meg Memory CP	NT9X14EA			00	12F-16F,	RUL10
					23F-27F	
Design Label (NT9X14EA)	P0736863			00	12F-16F,	RUL12
					23F-27F	
Filler Face Plate	NT9X19AA			00		RUL4
PB Filler Face Plate	NT9X19BA			00		RUL4
ENET/W-CM Bulkhead Assembly	NT9X6552		2	00		RUL7,9
CM/SLM Bulkhead Assembly	NT9X6553		2	00		RUL7,9
CM Design. Strip (rear)	P0735782		1	00		AP-01
CM Design. Strip (rear,bot)	P0739105		1	00		AP-01

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Shelf Strip, CM/SLM (rear)	P0739106		1	00		AP-01
Design Strip, CM/SLM (front)	P0739107		1	00		AP-01
Terminal Block Desig. Strip	P0736058		1			RUL17
Cabinet Power Filter Label	P0736059		1			RUL18
Cabinet Mechanical Hardware						RUL13
End Panel Assy Kit (Brown)	NTRX07AE		2			RUL13
End Panel Assy Kit (Grey)	NTRX07AB		2			RUL13
E-CORE Frame Supv Panel	NT9X03AA		1	52		RUL13
Cooling Unit (-48V)	NT9X95CU		1			RUL13
Stand-alone Power Cab. kit	NT9X9532		1			RUL14
Horizontal Power Cab. kit	NT9X9531		1			RUL14
EMI Contact Strips	P0714698		2			RUL14
C42 Cabinet Mechanical Assy	NT9X95BA					Note2

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT9X86AA	PEND.	NT9X86AB
NT9X53AC	PEND.	NT9X53AD
NT9X12AC	MD	NT9X12AD
NT9X13MA	MD	NT9X13MB
NT9X10BA	DEV	
NT9X26EA	DEV	

DEV - DEVELOPMENT. These products are in the development phase.
Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if
they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufac-
tured and cannot be ordered.

NOTES:

- 1) Reserved

- 2) Refer to NT9X95BA (EMA4-07-001) for additional mechanical hardware requirements for C42 Cabinet.
- 3) Global Power Converters are configured for the Global Market, ie:, they will function with a -48V or -60V input.

RULES:

- AP 1) When PEC NTZZ34AG is ordered, these items are provided.
- AP-01 1) These items are provided with NT9X01MB and are listed here for reference.
- AP-02 1) These items are provided with NT9X7204 and are listed here for reference.
- AP-03 1) These items are provided with NT9X0810 and are listed here for reference.

- RUL1
- 1) If ASUs are provisioned on either the LIS or ENI shelf, provide one (1) NTZZ34CA DMS SuperNode SE MS LIS/ENI Interface.
 - 2) To connect the F-BUS from the MS to the LIS shelf only, provide two (2) NT9X7211 F-BUS Cables (LE) and two (2) NT9X7213 F-BUS Cables (RI).
 - 3) To connect the F-BUS from the MS to the ENI and optional LIS, provide two (2) NT9X7210 F-BUS Cables (LE) and two (2) NT9X7212 F-BUS Cables (RI).
 - 4) If there are no ASUs in the LIS or ENI shelf, there is no need to extend the F-Bus from the MS down to the LIS or ENI shelves, in which case, do not order NTZZ34CA Building Block.
- RUL2
- 1) SuperNode SE supports up to six IOCs when configured for the LEC/IEC markets, and up to eight IOCs in the MTX markets. IOC 0, IOC 1, and 2 mandatory Inter-Message-Links (IML), must always be on slot 10 for plane 0 & slot 29 for plane 1.
 - 2) To provision Message Switch for up to two (2) IOCs, equip slots 10F and 29F with NT9X17AD (4 Port MS Interface card) port cards and 10R and 29R with NT9X23AA (4 Link DS-30 Paddle Boards).
 - 3) To provision Message Switch with more than two (2) IOCs and up to eight (8) IOCs, equip slots 10F and 29F with NT9X17BB (32 Port MS Interface card) port cards and 10R and 29R with NT9X69BA (16 Link DS-30 Paddle Boards).
 - 4) To provision Message Switch with up to three (3) LPPs, without JNET, equip slots 10F,11F and 29F,28F with NT9X17BB (32 Port MS Interface card) port cards and 10R,11R and 29R,28R with NT9X69BA (16 Link DS-30 Paddle Boards).
 - 5) The maximum number of JNET network modules that may be provisioned is seven (7) for LEC/IEC markets, except for MSL applications where the limit is ten (10). To support up to four (4) JNET network modules,without LPP, provision one (1) NTZZ34JA DMS SuperNode SE MS 8xDS30 Interface. To support up to ten (10) JNET network modules, and or up to three (3) LPPs, provision one (1) NTZZ34DA DMS SuperNode SE MS 32xDS30 Interface.
 - 6) Bulkheads MUST ALWAYS be job engineered on the MS shelf.

- 7) For Meridian initials which are not SNSE retrofit, and for non-Cabinetized applications, the NT9X6550 and NT9X6551 Bulkheads can be used, when NT9X23AA PBs or NT9X69BA PBs are used in slots 10 thru 12 for Plane 0 and in slots 29 thru 27 for Plane 1.

- For non-Cabinetized and Meridian Initials, provision,
 - NT9X0434 DS30 Cable Assemblies for each 9X23AA provisioned.
 - NT9X0520 DS30 Cable Assemblies for each 9X69BA provisioned.
- Also provision one of the three following IML Cable or Fiber links:
 - two (2) NT9X0475 IML DS30 Cable Assemblies (for overhead)
 - two (2) NT9X0433 IML DS30 Cable Assemblies (for raised floor)
 - two (2) A0630023 IML DS512 Fiber links for FP Billing Server applications.

Note that NT9X0434 cables are to be used only with NT9X23AA.

- 8) NT9X6560 and NT9X6561 bulkheads can be used when NT9X23AA PBs are used in slots 10 thru 14 for Plane 0 and in slots 29 thru 25 for Plane 1 for existing Meridian offices. Note that NT9X69BA cannot be used with NT9X6560 and 6561 bulkheads.

- For Existing Meridian applications, provision
 - one (1) NT9X0478 IML IOC0 Cable Assembly(right)
 - one (1) NT9X0479 IML IOC1 Cable Assemblies(left)
 - NT9X0474 DS30 Cable Assembly for each 9X23AA provisioned in slots 11 thru 14 for Plane 0 and in slots 28 thru 25 for Plane 1, only for IOCs.
 - NT9X0182 DS30 Cable Assemblies for each pair of 23AAs provisioned in slots 11 thru 14 for Plane 0 and in slots 28 thru 25 for Plane 1.

- 9) NT9X6567 and NT9X6568 bulkheads can be used when NT9X23AA/69BA PBs are used for Cabinetized(streamline) offices. Provision one (1) NTEX5070 cover plate for each unused cable positions in NT9X6567 and NT9X6558 bulkheads.

- For Streamline application provision,
 - one (1) NT9X6544 IML IOC0 Cable Assembly for 23AA in slot 10 for Plane 0.
 - one (1) NT9X6544 IML IOC1 Cable Assembly for 23AA in slot 29 for Plane 1.

(OR)

- one (1) NT9X0483 14 port Cable Assembly for 69BA in slot 10R for Plane 0.
- one (1) NT9X0487 6 port Cable Assembly for 69BA in slot 11R for Plane 0.
- one (1) NT9X0483 14 port Cable Assembly for 69BA in slot 29R for Plane 1.
- one (1) NT9X0487 6 port Cable Assembly for 69BA in slot 28R for Plane 1.

AND

- two (2) NT9X0489 IML DS30 Cable Assemblies (for overhead)
- two (2) NT9X0488 IML DS30 Cable Assemblies (for raised floor)

Note that JNET is NOT supported with SNSE in streamline application.

Connectors C0-C3;D0-D3;and E0-E3 in the NT9X6567/68 BHs are used for LPP 0, 1 and 2 respectively.

RUL3 1) Message Switch Configurations

The range of port cards and paddle boards that are supported by the SuperNode SE allows it to be configured with up to 8 Input/Output Controllers (IOC), 2 mandatory Inter-Message-Links (IML), up to 3 Link Peripheral Processors (LPP), and either a fully equipped 16K channel Enhanced Network (ENET) or up to 7 junctored Network Modules (JNET/NMs). Note that MSL Cabinet packaged systems can support up to 10 NMs. Where ENET 16K is used, the message switch also provides two slots for interfaces to Application/File Processors(AP/FP) and or Single Shelf LPPs (SSLPP or FLIS) external to the SNSE cabinet.

To Provision Message Switch for internal LIS interface, equip slots 8F and 31F with NT9X73BA(Rate Adapter CP) and 8R and 31R with NT9X79BA, F-Bus Extender Paddle Board.

		ENET	JNET	JNET
	MS SLOTS	MS P-side ports < than 256	1 - 4 Network Modules	5 - 7 Net. Mod. OR 10NMs for MSL appl.
2 IMLs 2 IOCs & 0 LPP & 1 FLIS	10 & 29 11 & 28 12 & 27 13 & 26	17AD/23AA 17AD/62BA	17AD/23AA 17AD/23AA 17AD/23AA 17AD/62BA	17AD/23AA 17BB/69BA 17BB/69BA 17AD/62BA
2 IMLs up to 8 IOCs & 0 LPPs	10 & 29 11 & 28 12 & 27 13 & 26*	17BB/69BA	17BB/69BA 17AD/23AA 17AD/23AA	17BB/69BA 17BB/69BA 17BB/69BA
2 IMLs up to 8 IOCs & 3 LPPs	10 & 29 11 & 28 12 & 27 13 & 26*	17BB/69BA 17BB/69BA	17BB/69BA 17BB/69BA 17BB/69BA	17BB/69BA 17BB/69BA 17BB/69BA

Note that the SuperNode SE can support either ENET or JNET configurations. It cannot support mixed ENET and JNET configurations, because JNET cannot interwork with ENET.

* Slots 13 and 26 are for the FLIS interface and are shown in subrule 3 below.

- 2) Use the following table to provide the circuit packs necessary for the required maximum number of MS and ENET ports. Note that the single MS port card configuration for ENET are recommended at initial office deployment, and two card configurations for subsequent growth.

The ENET interface provisioning is determined by the number of peripheral message channels required per ENET plane and is shown below.

P-side ports/ MS Plane	P-Side Peripheral Msg channels per ENET Pl.	slot 15 & 24		slot 14 & 25	
		Front Front	Rear Rear	Front Front	Rear Rear
32	< or = 15	17BB	62CA	-	-
64	< or = 31	17BB 17DA	62CA 62CA	17BB -	62CA/25BA -
96	< or = 47	17DA	62CA	17BB	62CA/25BA
128	< or = 63	17DA 17CA	62CA 62CA	17DA -	62CA/25BA -
256	< or = 127	17CA	62CA	17CA	62CA/25BA

The circuit pack fill order is:

- 1) 15F/R (MS 0) and 24F/R (MS 1),
- 2) 14F/R (MS 0) and 25F/R (MS 1).

The NT9X17CA is a 128 port card that has attained General Availability (GA) in BCS36.

The NT9X25BA MS Port Expander with Terminations paddleboard can only be used for Message Port growth on

SNSE extensions. All initial jobs must use the NT9X62CA paddleboard.

3) SR512 Ports

Slots 13 and 26 are always available for additional functionality (That is AP/FP/SSLPP).

To add FLIS provide, two (2) NT9X17AD and two (2) NT9X62BA.
To add AP/FP provide, two (2) NT9X17AD and two (2) NT9X62BA.

- RUL4 1) Provision NT9X19AA Filler Face Plates and NT9X19BA Paddleboard Filler Face Plates for all unoccupied slots.

- RUL5 1) Provide one (1) NTZZ34EC DMS SNSE LIS Common CP in shelf position 26 if LIUs are to be provisioned.

If LIUs are equipped on the LIS and ENI shelves, provide:
two (2) NT9X79AA F-Bus Extender Paddleboards and,
two (2) NT9X79AA Des. Labels (P0689621).
These items extend the F-Bus on to the ENI shelf.

If LIUs are equipped on the LIS shelf only, provide:
two (2) NT9X79BA F-Bus Extender with BUS Termination PBs
two (2) NT9X79BA Des. Labels (P0689622).
The NT9X79BA terminate the F-Bus on the LIS shelf.

Provision one (1) NTEX5025 Cover Plate for each unused cable position on the NT9X6534 Bulkhead Assemblies. There are a total of 32 cable connector positions on the bulkheads, 16 on each side.

- 2) If ASU functionality is not required on the LIS shelf, provide one (1) NT9X01FB Filler Packfill and thirty-two (32) NTEX5025 Cover Plates. Note that the NT9X6534 BH is always provided with NTZZ34AD.

Bulkheads MUST ALWAYS be equipped on the LIS shelf, even if fillers are the only packs shipped with the SuperNode SE cabinet.

The NT9X01FB filler packfill contains:

- four (4) NT9X19CA Power Filler Face Plates,
- two (2) NT9X0314 FSP Shorting Plugs (B0225296),
- twenty-six (26) NT9X19AA Filler Face Plates and
- twenty-six (26) NT9X19BA Paddleboard Filler Face Plates,

- 3) Provide two (2) NT9X30AB Global Power Converters, two (2) STP Power Filler CP and two (2) Designation labels (P0738496) for standard applications,
or one (1) Redundant Power Converter (NTZZ34PB) when dual redundancy for the powering of the LIS shelf is required by the Customer.

- RUL6 1) A total of up to twelve (12) ASUs may be provisioned on the LIS. Provision any combination of:
NTZZ30AM CCS7 8 Meg LIU (E-DS0A)
NTZZ30BM CCS7 8 Meg LIU (E/HC-DS0A)
NTZZ30CM CCS7 8 Meg LIU (V.35)
NTZZ30MA Network Interface Unit
NTZZ30NA X.25/X.75 Link Interface Unit
NTZZ30TB CCS7 8 Meg LIU (E/HC-DS0A/LFS)
NTZZ30EC Ethernet Interface Unit
- 2) Provide NT9X19AA Front Filler circuit packs and NT9X19BA Rear Filler paddleboards for all unequipped slots in the LIS shelf.
- 3) Provide one NTZZ30MA for each Network Interface Unit required. One NIU provides network interface capability for one complete LIS shelf (maximum of eight XLIUs).
- 4) Provide one NTZZ30NA for each X.25/X.75 Link Interface Unit required.
- 5) The LIS will support up to eight (8) DMS Packet Handler plus two (2) LIU7s per application. The LIS shelf can support up to a maximum of eight (8) DMS packet handler and two LIU7s.

Each DMS Packet Handler is composed of two circuit packs and one paddleboard. Note that LIS MUST be provisioned with NIUs to use the DMS Packet Handler configuration.

- 6) The LIS will support one pair of Network Interface Unit (NIU) and up to a maximum of ONE per SNSE Cabinet. The NIU can be located only in the centre of the LIS shelf, and it is divided into two halves. Unit 0 for Plane 0 and Unit 1 for Plane 1 respectively. The NIU provides a connection from the LIS shelf to the network.

Each Network Interface Unit (NIU) is composed of two circuit packs and one paddleboard.

Refer to Figure below for Unit 0 and Unit 1. Also refer to NTZZ30MA BB section for ALWAYS PROVIDED circuit packs and paddle boards.

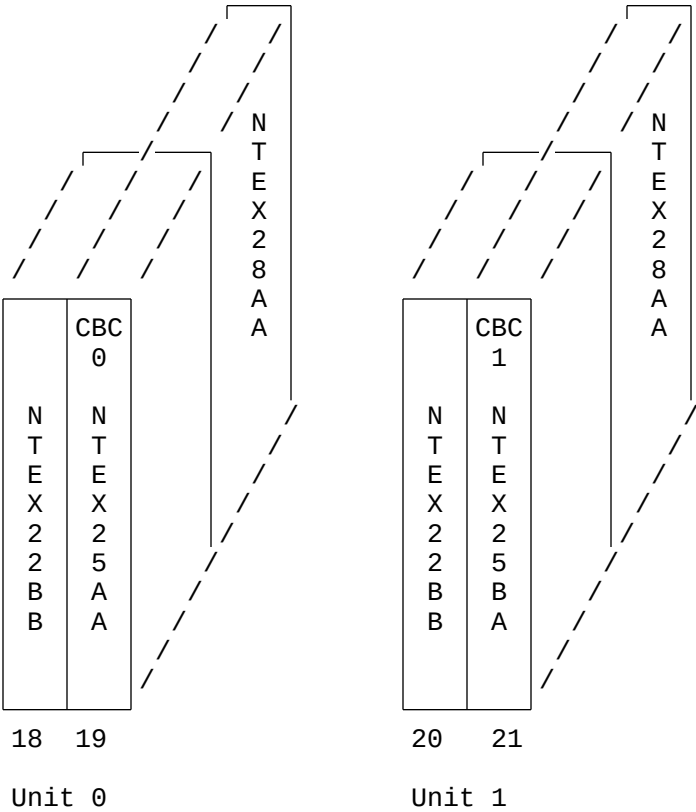


Figure NIU Unit 0 and Unit 1 Configuration.

- 7) Each DMS Packet Handler is composed of two circuit packs and one paddleboard. Note that LIS MUST be provisioned with NIUs to use the DMS Packet Handler configuration.

Refer to Figure below. Also refer to NTZZ30NA BB section for ALWAYS PROVIDED circuit packs and paddle boards.

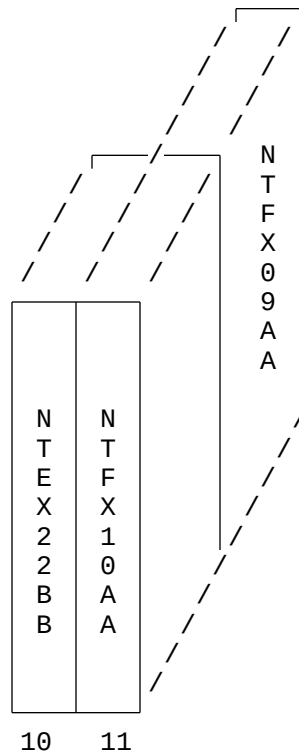


Figure DMS - Packet Handler Configuration

- 8) Provision one (1) P0675703 Rear Bottom Shelf ID Label per LIS provisioned.

Provision one (1) P0709181 LIU (two slot) Identification Label per LIU provisioned.

Provision one (1) P0704358 Designation Label per NT9X77AA provisioned.

Provision one (1) P0704359 Designation Label per NT9X78BA provisioned.

- 9) Provide one NTZZ30EC for each Ethernet interface required.

- RUL7 1) If ENET or LIU functionality is not required in the ENI shelf, and the cabinet is to be shipped with an empty ENI Shelf Assembly, provide one (1) NT9X01FB Filler Packfill, two (2) ENI bulkheads, and two (2) NT9X6553 CM/SLM bulkheads.

The NT9X01FB filler packfill contains:

- four (4) NT9X19CA Power Filler Face Plates,
- two (2) NT9X0314 FSP Shorting Plugs (B0225296),
- twenty-six (26) NT9X19AA Filler Face Plates and
- twenty-six (26) NT9X19BA Paddleboard Filler Face Plates,

Bulkheads MUST ALWAYS be provided on the ENI shelf, even if fillers are the only packs shipped in the ENI shelf.

Bulkheads MUST ALWAYS be provided on the CM/SLM shelf.

- 2) The ENI and CM/SLM bulkheads are provisioned as follows:

BULKHEAD PROVISIONING

The ENI bulkheads have different connectors for non-Cabinetized, Meridian as well as Streamline applications. The bulkhead NT9X6553 is the common CM/SLM bulkhead for Standard, Meridian and Streamline applications.

The NT9X6520/21 pair always requires the NT9X6553 CM/SLM bulkhead for 1 to 48 DS30 links. The NT9X6520/21 pair always requires the NT9X6552 CM/SLM bulkhead for 49 to 96 DS30 links.

Choose one of the bulkhead options listed below:

For standard applications without an SLC, with up to 48 DS30 links provision:

- one (1) NT9X6520 ENI Bulkhead Assembly (left),
- one (1) NT9X6521 ENI Bulkhead Assembly (right) and
- two (2) NT9X6553 CM/SLM Bulkhead Assemblies.

The NT9X6553 CM/SLM bulkheads have no DS30 connection capability.

For standard applications without an SLC, with more than 48 DS30 links, but less than or equal to 96 DS30 links provision:

- one (1) NT9X6520 ENI Bulkhead Assembly (left),
- one (1) NT9X6521 ENI Bulkhead Assembly (right) and
- two (2) NT9X6552 CM/SLM Bulkhead Assemblies

The NT9X6552 CM/SLM bulkheads have extra DS-30 connection capacity.

For standard applications with an SLC, and with more than 48 DS30 links, but less than or equal to 112 DS30 links provision:

one (1) NT9X6530 ENI Bulkhead Assembly (left),
one (1) NT9X6531 ENI Bulkhead Assembly (right) and
two (2) NT9X6553 CM/SLM Bulkhead Assemblies.

The CM bulkhead is required when the DS-30 channel capacity exceeds 48 DS-30s per ENET plane, without an SLC. Forty-eight DS-30s is the maximum connection capacity of a single NT9X6520/21 ENI bulkhead.

- 3) For Meridian applications, provision:
 - two (2) NT9X0813 Bulkhead Assemblies and
 - two (2) NT9X6553 CM/SLM Bulkhead Assemblies.
- 4) For Streamline applications, provision:
 - two (2) NT9X8909 Streamline Bulkhead Assemblies and
 - two (2) NT9X6553 CM/SLM Bulkhead Assemblies.

Provision one (1) NTEX5025 Cover Plate for each unused cable position on the NT9X8909 Bulkhead Assemblies. There are a total of 28 cable connector positions on the bulkheads, 14 on each side. Note that, when using NT9X8909 ENI Bulkhead with Cabinetized TME without an SLC, only a maximum of 14 8-DS30 cables can be used.

- RUL8
- 1) If LIU functionality is required on the ENI shelf, and ENET has been provided, provision one (1) NTZZ34GB DMS SNSE ENI F-Bus Common CP.
 - 2) Due to an incompatibility problem, NONE of the following BB may be ordered at this time. This problem applies only to the ENI shelf, these same BB may be used on the LIS shelf:
NTZZ30AM CCS7 8 Meg LIU (E-DS0A),
NTZZ30BM CCS7 8 Meg LIU (E/HC-DS0A),
NTZZ30CM CCS7 8 Meg LIU (V.35),
NTZZ30TB CCS7 8 Meg LIU (E/HC-DS0A/LFS)
NTZZ30EC Ethernet Interface Unit
as required.

Note:

A total of up to two (2) LIUs may be provisioned on the ENI shelf.

The ENI shelf cannot support LIUs without the provisioning of an ENET. The reason for this restriction is that the ENET processor circuit packs control the power lock-out for

the ENI shelf. If there are no ENET processor packs, there is no power supplied to the ENI shelf.

- RUL9 1) The minimum allowable ENET configuration is 4K, with 2K of the initial 4K channels assigned for messaging between the MS and the ENET. The ENET on SuperNode SE is only available in 4K, 8K, 12K and 16K configurations.

- 2) For a 4K ENET, provision one (1) NTZZ34FA DMS SNSE 4K ENET, one (1) NTZZ34BB DMS SNSE ENI Common CP and see item 6) below for cable provisioning requirements.

Provide front fillers (NT9X19AA) and paddleboard fillers (NT9X19BA) for all unprovisioned slots. All slots must be filled to ensure proper air flow for cooling.

- 3) For an 8K ENET, provision one (1) NTZZ34FA DMS SNSE 4K ENET, one (1) NTZZ34BA DMS SNSE ENI Common CP and four (4) NT9X35FA 8K Crosspoint Circuit Packs in slots 14F, 15F for Plane 0, and 24F and 25F for Plane 1.

Also provision any combination of NT9X40BB 4-Port DS512 Fiber Interface Paddleboards, NT9X41BA 16-Port DS30 Paddleboards and NT9X45BA 3-Port DS512 + 16-Port DS30 Paddleboards in slots 14R, 15R, 24R and 25R, provided that slots 14R and 24R have matching paddleboards and slots 15R and 25R also have matching paddleboards.

Also, see 6) below for cable provisioning requirements. Provide front fillers (NT9X19AA) and paddleboard fillers (NT9X19BA) for all unprovisioned slots. All slots must be filled to ensure proper air flow for cooling.

- 4) For a 12K ENET, provision one (1) NTZZ34FA DMS SNSE 4K ENET, one (1) NTZZ34BA DMS SNSE ENI Common CP, and eight (8) NT9X35FA 8K Crosspoint Circuit Packs in slots 14F to 17F for Plane 0 and 24F to 27F for Plane 1.

Also provision any combination of NT9X40BB 4 Port DS512 Fiber Interface Paddleboards, NT9X41BA 16-Port DS30 Paddleboards and NT9X45BA 3-Port DS512 16-Port DS30 Paddleboards in slots 14R to 17R and 24R to 27R, providing that matching paddleboards are used in each of the following pairs of slots:

14R and 24R; 15R and 25R;
16R and 26R; 17R and 27R.

The total number of NT9X41BA and NT9X45BA Paddleboards may not exceed four (4) per ENET plane for Meridian applications.

Also, see 6) below for cable provisioning requirements.

Provide front fillers (NT9X19AA) and paddleboard fillers (NT9X19BA) for all unprovisioned slots. All slots must be filled to ensure proper air flow for cooling.

- 5) For a 16K ENET, provision one (1) NTZZ34FA DMS SNSE 4K ENET, one (1) NTZZ34BA DMS SNSE ENI Common CP and twelve (12) NT9X35FA 8K Crosspoint Circuit Packs in slots 14F to 19F and 24F to 29F.

Also provision any combination of NT9X40BB 4-Port DS512 Fiber Interface Paddleboards, NT9X41BA 16-Port DS30 Paddleboards and NT9X45BA 3-Port DS512 16-Port DS30 Paddleboards in slots 14R to 19R and 24R to 29R, provided that matching paddleboards are used in each of the following pair of slots:

14R and 24R; 15R and 25R;
16R and 26R; 17R and 27R;
18R and 28R; 19R and 29R.

The total number of DS30 ports provided by the NT9X41BA and NT9X45BA Paddleboards may not exceed ninety-six (96) per ENET plane due to the limit of bulkhead cable connectors available to terminate DS30 links.

The total number of NT9X41BA and NT9X45BA Paddleboards may not exceed four (4) per ENET plane for Meridian applications.

The paddleboards in slots 19R and 29R can not be used for DS30 links if NT9X6520 and 6521 bulkheads are provisioned.

Also, see 6) below for cable provisioning requirements.

Provide front fillers (NT9X19AA) and paddleboard fillers (NT9X19BA) for all unprovisioned slots. All slots must be filled to ensure proper air flow for cooling.

- 6) For Standard applications, provision:

one (1) NT9X0520 Cable Assembly per NT9X41BA and
one (1) NT9X0524 Cable Assembly per NT9X45BA
(if the NT9X41BA or NT9X45BA is in slot 17R or 18R and requires DS30 connections to the CM bulkhead in position 00, use NT9X0540 instead of NT9X0520 and NT9X0542 instead of NT9X0524).

for Meridian applications, provision:

one (1) NT9X0815 Cable Assembly per NT9X41BA and
one (1) NT9X0817 Cable Assembly per NT9X45BA.

for up to 64 DS-30s.

For Streamline applications, provision:

one (1) NT9X0546 Cable Assembly per NT9X41BA and

one (1) NT9X0547 Cable Assembly per NT9X45BA

(when an SLC is provided, use NT9X0544 instead of NT9X0546 and use NT9X0545 instead of NT9X0547).

Both of the above cabling scenarios for Streamline allow the termination of up to 112 DS-30 links.

Note:

The NT9X40BB only has fiber ports and fiber cables do not terminate on the bulkhead. The cables from this paddleboard go through a hole in the bulkhead and connect directly to the fiberized peripheral.

7) BULKHEAD PROVISIONING

The ENI bulkheads have different connectors for Standard, Meridian as well as Streamline applications. The bulkhead NT9X6553 is the common CM/SLM bulkhead for Standard, Meridian and Streamline applications.

The NT9X6520/21 pair always requires the NT9X6553 CM/SLM bulkhead for 1 to 48 DS30 links. The NT9X6520/21 pair always requires the NT9X6552 CM/SLM bulkhead for 49 to 96 DS30 links.

The ENI and CM/SLM bulkheads are provisioned as follows:
Choose one of the bulkhead options listed below:

For standard applications without an SLC, with up to 48 DS30 links provision:

one (1) NT9X6520 ENI Bulkhead Assembly (left),

one (1) NT9X6521 ENI Bulkhead Assembly (right) and

two (2) NT9X6553 CM/SLM Bulkhead Assemblies.

The NT9X6553 CM/SLM bulkheads have no DS30 connection capability.

For standard applications without an SLC, with more than 48 DS30 links, but less than or equal to 96 DS30 links provision:

one (1) NT9X6520 ENI Bulkhead Assembly (left),

one (1) NT9X6521 ENI Bulkhead Assembly (right) and

two (2) NT9X6552 CM/SLM Bulkhead Assemblies

The NT9X6552 CM/SLM bulkheads have extra DS-30 connection capacity.

For standard applications with an SLC, and with more than 48 DS30 links, but less than or equal to 112 DS30 links provision:

one (1) NT9X6530 ENI Bulkhead Assembly (left),
one (1) NT9X6531 ENI Bulkhead Assembly (right) and
two (2) NT9X6553 CM/SLM Bulkhead Assemblies.

The CM bulkhead is required when the DS-30 channel capacity exceeds 48 DS-30s per ENET plane, without an SLC. Forty-eight DS-30s is the maximum connection capacity of a single NT9X6520/21 ENI bulkhead.

- RUL10 1) Provide two NT9X13MA processors to support the CM section of the SuperNode SE. The NT9X13MA supports 24Mb memory only. The RTIF PB NT9X26AB will have to be provisioned with NT9X13MA processor. The NT9X13MA CP is now MD, and replaced by the NT9X13MB.
- 2) For new jobs at BCS35 and higher, provide the NT9X13MB processor circuit boards. The NT9X13MB Processor provides ability to function with either NT9X14EA (96 Meg memory) or NT9X14DB (24 Meg memory), but not both. That is NT9X14DB and NT9X14EA WILL NOT be supported in a mixed configuration. Check availability prior to ordering NT9X14EA. The RTIF PB NT9X26AB will have to be provisioned with NT9X13MB processor.
- 3) The NT9X14EA memory boards have the capability to function in burst mode. Burst mode memory is required to fully utilize the Series 60 BRISC processor. Order the SE 60 processor (NT9X10AA) if a higher capacity processor is required, BCS 36 or higher is required for base software. The NT9X26DB RTIF will have to be provisioned with this SE 60 BRISC processor.
- 4) The SE 70 BRISC processor may be ordered if a higher capacity processor is required. Also NA004 is required as base software. The RTIF required for the SE 70 is the NT9X26EA. If a SE 70 processor is required, and the office is at CSP04 or higher, SLM III is required. The SE 70 contains 256 MBytes of memory onboard, no memory cards are required if the combined PS/DS is less than 224 MBytes. SE 70 is available only with NPI approval.
- 5) Provision memory circuit packs in pairs, in slots in the following order:
- 1) 16F and 23F;
 - 2) 15F and 24F;
 - 3) 14F and 25F;
 - 4) 13F and 26F;
 - 5) 12F and 27F.

The number of pairs to be provisioned depends on the memory requirement for the office.

Processor	SE 20 NT9X13MA	SE 20 NT9X13MB	SE 60 NT9X10AA	SE 70 NT9X10BA
RTIF PB	NT9X26AB	NT9X26AB	NT9X26DB	NT9X26EA
Dual Port Msg	NT9X86AA	NT9X86AA	NT9X86AB	NT9X86AB
Memory	24 Meg. NT9X14DB	NT9X14DB OR NT9X14EA	96 Meg. NT9X14EA	96 Meg NT9X14EA
Port Card	NT9X12AC/ NT9X12AD	NT9X12AC/ NT9X12AD	NT9X12AD	NT9X12AD
Software Release	BCS 34	BCS 35	BCS 36	CSP004

SNSE BRISC 60 and 70 Upgrades

Refer to table above for BRISC upgrade requirements.

- RUL11 1) The NT9X53AD is functionally compatible with NT9X54AC. However, the NT9X53AD is the recommended pack.

Note that, NT9X53AC is incompatible with BCS30 or older BCS's. NT9X53AD is incompatible with BCS36 or older BCS's. For Stratum 2 applications, provision the NT9X53AC instead of the NT9X53AD.

- RUL12 1) Provide designation labels as required.

- RUL13 1) Provide mechanical hardware for the S/DMS cabinet, such as end guards, frame isolating pads and anchors by using the Engineering Manual inserts:

NT9X95BA - Mechanical Hardware for S/DMS Cabinet,
NTRX73 - Cabinetized DMS Cosmetic Endguards
and EMI Sidepanels.

- 2) Provision two (2) NTRX07AB End Panel Assy Kits (Grey) for grey cabinets.

OR

- 3) Provision two (2) NTRX07AE End Panel Assy Kits (Brown) for brown cabinets.
- 4) For offices with -48 volt power convertors, provide one (1) E-CORE Frame Supv Panel (NT9X03AA) and one (1) Cooling Unit (-48V) (NT9X95CU). This unit comes with 3 replaceable blower assemblies (A0381714), one (1) MTM alarm card (A0383984), and one (1) relay (A0383985) installed. However customers may desire spares.

- RUL14 1) Provide one (1) NT9X9532 stand-alone Cabling Interface Kit when powering the NT9X01MB cabinet from the 7 foot PDC frame OR powering from the new CPDC (NTRX31CA) cabinet, OR powering from the NTRX31AA or from the NTRX31BA CPDC cabinet which is in the different lineup than the NT9X01MB. This kit includes cables, filters, and miscellaneous mounting hardware.

Customers may require a spare EMI line filter (A0326932) per office, this filter is part of the stand-alone interface kit.

Twenty-two (22) white boots are included in the NT9X9532 stand-alone Cabling Interface Kit.

Note: The twenty-two white boots MUST NOT be installed on the manufacturing shop floor. The boots must be shipped separately (loose) and installed at the job site.

- 2) Provide one (1) NT9X9531 Horizontal Power Cabling Interface Kit when powering the NT9X01MB cabinet from the NTRX31AA or from the NTRX31BA CPDC cabinet which is in the same lineup as the NT9X01MB. This kit includes power cables, terminal blocks, and miscellaneous mounting hardware.

Always provide:

two (2) EMI contact strips (P0714698)
when providing the NT9X9531 Horizontal Power Cabling Interface Kit.

- RUL15 1) Provide two (2) NT9X86AA Dual Port Message Controllers when the CM Processor (NT9X13MA or NT9X13MB) is provided.
- 2) Provide two (2) NT9X86AB Dual Port Message Controllers when a BRISC processor (NT9X10AA/BA) is provided.
- RUL16 1) Provide one (1) P0736273 Optical Fiber Danger Label (English) per shelf when fiber paddleboards are provided.

- RUL17 1) Provide one (1) P0736058 Terminal Block Designation Strip per SNSE cabinet when powering the SNSE cabinet in a Streamline line up.
- RUL18 1) Provide one (1) P0736059 power filter label per SNSE cabinet when powering the SNSE cabinet in a non-Streamline line up or in a Stand alone application.

DMS SUPERNODE SE COMBINED CABINET: (-60V)

PEC CODE: NTZZ34MD

CPC CODE: B0241590

| RATING: MD

REPLACES: NTZZ34MC

REPLACED BY:

ABBREVIATION NAME: SCC

ENGINEERING DESCRIPTION: The DMS SuperNode SE Combined Cabinet: (-60V) houses a Computing Module (CM), a System Load Module 1A (SLM1A), a Message Switch (MS), an Enhanced Network (ENET) and a Link Interface Shelf (LIS).

The NTZZ34MD Building Block is for applications in markets that utilize -60V power.

REFERENCE DOCUMENTATION: SL9X01MB 01 01
MS9X01MB 01 15
SLZZ34MD 00 01
NTZZ34MD REL 02

MARKETS: Applicable markets:

Europe

ISSUE AUTHOR: NTI: Jerry Palmer Dept. 3471 (PPK)

MAIN CONTACT: NTI: Jerry Palmer Dept. 3471 (PPK)

NTZZ34MD EMC4-06-016 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 08 10	ECM 632 06	NTZZ34MA became MD and replaced by NTZZ34MB. In NTZZ34MB the FSP and CU for -60V are always provided. Also 24 Meg memory is not an option in 34MB
93 12 21	ECM 632 07	Correct SLZZ34MB stocklist to have 2 NT9X26AB. Introduction of NT9X0183 and NT9X0187 cables for cabinetized BHs 9X6567/68. Cables must be used with NT9X69BA cps. Changes to item 9 of RUL2. NT9X62CA must always be used. DO NOT use NT9X25BA in MS for ENET appl..
94 02 23	ECM 632 08	To show issue 07 update in CODA. Also modify RUL2 item 7.
94 03 10	ECM 632 09	Replace the NT9X95AA with the NT9X95BA. (ECD: 018-41431)
94 06 16	ECM 632 10	Introduction of NT9X53AD clock card, NT9X86AB DPMC card, NT9X91AC power pack, (EC 006-19546)
94 09 26	ECM 632 11	Introduce NT9X12AD, replaces NT9X12AC (ECD: 006-20777)
94 11 22	ECM 632 12	Update BB references. Updated ENET interface provisioning table.
95 03 22	ECM 632 13	Added new LIU card, NTZZ30TB, ECD: 018-43880, Incorporated ET 20839, ET 21079 and ET 20689. Changed Rul3 for readability. Updated SE 70 and NT9X53AD availability. Incorporated ET 20779. ECD: 018-44239 Changed NT9X77AA to NT9X77AB by using NTZZ30CM, replaces NTZZ30WA. ECD 018-43870 replaces NTZZ30UA with NTZZ30AM and NTZZ30VA with NTZZ30BM.
95 04 27	ECM 632 14	Define mounting locations for NIU per ECD 018-44497.
95 08 23	ECM 632 15	Upgraded ENET interface table per ECD 018-44830. Added to requirements for SLM III software. Removed Frame Fail Lamps per ECD 018-45801.
95 11 07	ECM 632 16	Removed NTZZ30AM, NTZZ30BM, NTZZ30CM

Engineering Manual Section Change History

DATE	DOCUMENT	REASON
96 01 05	ECM 632 17	and NTZZ30TB from provisioning on the ENI shelf. ECD 018-46074. Update ENET interface table per MS and ET 114630. Add DS512 Fiber IML for AP/FP applications, ECD 018-44368. Add dual redundant power packs for LIS shelf per ECD 006-19337. Added Hardware/Software upgrades per ET32379 Show spare EMI line filter as part of Stand-alone Power kit per ET 80303. Added NTZZ30EC, allows Ethernet Interface card provisioning per ECD 018-45721. Added Cabinet Power filter label per ET 32759. Remove NTZZ44LA and NTZZ44MA, replaced by detail power converters and NTZZ34PB.
96 03 28	ECM 632 18	MD section, replaced by NTZZ34AH.

The DMS SuperNode SE Combined Cabinet: (-60V) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
DMS SuperNode SE Core Cabnt	NT9X01MB		1			AP
Message Switch Shelf Assy	NT9X0470		1	39		AP-01
Global -5V, 20A Pow. Conv.	NT9X31AB		2	39	01F, 33F	AP
Global +5V, 86A Pow. Conv.	NT9X30AB		2	39	04F, 36F	AP
T-Bus Terminator CP	NT9X49CC		2	39	07F, 32F	AP
Mapper CP	NT9X15AA		2	39	09F, 30F	AP
4-Port MS I/F CP	NT9X17AD		2	39	10F, 29F	RUL2
32-Port MS I/F CP	NT9X17BB		2	39	10F, 29F	RUL2
4-Port MS I/F CP	NT9X17AD		2	39	16F, 23F	AP
MS Processor CP	NT9X13NA		2	39	17F, 22F	AP
#Combined Clock CP	NT9X53AC		2	39	18F, 21F	RUL15
DMS-Bus System Clock CP	NT9X53AD		2	39	18F, 21F	RUL15
T-Bus Access CP	NT9X52AA		2	39	19F, 20F	AP
4-Link DS30 PB	NT9X23AA		2	39	10R, 29R	RUL2
16-Link DS30 PB	NT9X69BA		2	39	10R, 29R	RUL2
32-Port MS I/F CP	NT9X17BB		2	39	11F, 28F	RUL2
(for upto 3 LPPs, no JNET)						
16-Link DS30 PB	NT9X69BA		2	39	11R, 28R	RUL2
(for upto 3 LPPs, no JNET)						
DMS SNSE MS LIS/ENI I/F	NTZZ34CA		1	39		RUL1
F-BUS Cab Assy 3-shelf (LE)	NT9X7210		2	39		RUL1
F-BUS Cab Assy 3-shelf (RI)	NT9X7212		2	39		RUL1
F-BUS Cab Assy 2-shelf (LE)	NT9X7211		2	39		RUL1
F-BUS Cab Assy 2-shelf (RI)	NT9X7213		2	39		RUL1
DMS SNSE MS 8xDS30 I/F	NTZZ34JA		1	39		RUL2
DMS SNSE MS 32xDS30 I/F	NTZZ34DA		1	39		RUL2
MS Bulkhead Assembly (left)	NT9X6550		1	39		RUL2
(for non-Cab & Mer. Initial)						
MS Bulkhead Assembly (right)	NT9X6551		1	39		RUL2
(for non-Cab & Mer. Initial)						
DS30 Cable Assembly	NT9X0434			39		RUL2
(For non-Cabinetized appl.)						
DS30 Cable Assembly	NT9X0520			39		RUL2
(with 69BA for non-Cab appl)						
DS30 IML DS30 Cable Ass.	NT9X0475		2	39		RUL2
(Overhead appl.)						
DS30 IML DS30 Cable Ass.	NT9X0433		2	39		RUL2
(Raised Floor appl.)						
DS512 IML AP/FP Fiber Link	A0630023		2	39	13R, 26R	RUL2
MS Bulkhead Assembly (left)	NT9X6560		1	39		RUL2
(Existing Meridian appl.)						
MS Bulkhead Assembly (right)	NT9X6561		1	39		RUL2
(Existing Meridian appl.)						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
IML IOC0 Cable Assembly (Existing Meridian appl.)	NT9X0478		1	39		RUL2
IML IOC1 Cable Assembly (Existing Meridian appl.)	NT9X0479		1	39		RUL2
DS30 Cable Assembly (with 23AA for exi. Mer.)	NT9X0474			39		RUL2
DS30 Cable Assembly (23AA in pairs, exi. Mer.)	NT9X0182			39		RUL2
Cabinetized Bulkhead (left) (Streamline Application)	NT9X6567		1	39		RUL2
Cabinetized Bulkhead (right) (Streamline Application)	NT9X6568		1	39		RUL2
DS30 IML DS30 Cable Ass. (Cab.appl., Overhead appl.)	NT9X0489		2	39		RUL2
14 port DS30 cable assembly	NT9X0483			39		RUL2
6 port DS30 cable assembly	NT9X0487			39		RUL2
DS30 IML DS30 Cable Ass. (Cab.appl., Raised Flr. appl.)	NT9X0488		2	39		RUL2
IML IOC0 Cable Assembly (Cabinetized Application)	NT9X6544		1	39		RUL2
IML IOC1 Cable Assembly (Cabinetized Application)	NT9X6544		1	39		RUL2
Bulkhead Cover Plate	NTEX5070			39		RUL2
4-Port MS I/F CP	NT9X17AD		2	39	13F, 26F	RUL3
SR-512 Fiber Paddle Board	NT9X62BA		2	39	13R, 26R	RUL3
32-Port MS I/F CP	NT9X17BB		2	39	15F, 24F 14F, 25F	RUL3
DMS Bus 64 Port CP	NT9X17DA			39	15F, 24F 14F, 25F	RUL3
DMS Bus 128 Port CP	NT9X17CA			39	15F, 24F 14F, 25F	RUL3
2-Link SR512 PB	NT9X62CA			39	15R, 24R	RUL3
2-Link SR512 PB	NT9X62CA			39	14R, 25R	RUL3
2-Link SR512 PB	NT9X62CA		2	39	16R, 23R	AP
RTIF PB	NT9X26AB		2	39	17R, 22R	AP
Clock Interface PB	NT9X54AC		2	39	18R, 21R	AP
MS Clock Cable Assembly	NT9X0436		1	39		AP
MS Clock Cable Assembly	NT9X0437		1	39		AP
Cable Assembly	NT9X0438		4	39		AP
MS0-MS1 Cable Assembly	NTEX5026		1	39		AP
Filler Face Plate	NT9X19AA			39		RUL4
PB Filler Face Plate	NT9X19BA			39		RUL4
Design Label (NT9X17AD)	P0735096			39	10F, 29F	RUL12
Design Label (NT9X23AA)	P0678443			39	10R, 29R	RUL12
Design Label (NT9X17BB)	P0726962			39	10F, 29F	RUL12
Design Label (NT9X69BA)	P0726964			39	10R, 29R	RUL12

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Design Label (NT9X17BB)	P0726962			39	15F, 24F 14F, 25F	RUL12
Design Label (NT9X17DA)	P0707891			39	15F, 24F 14F, 25F	RUL12
Design Label (NT9X17CA)	P0678441			39	15F, 24F 14F, 25F	RUL12
Design Label (NT9X62CA)	P0735105			39	14R, 25R, 15R, 24R	RUL12
Shelf Strip, MS (rear, top)	P0739091		1	39		AP-01
Shelf Strip, MS (rear, bot)	P0739090		1	39		AP-01
MS Design. Strip (front)	P0739092		1	39		AP-01
MS Design. Strip (rear)	P0735784		1	39		AP-01

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Link Interface Shelf Assy	NT9X7204		1	26		AP
DMS SNSE LIS Common CP	NTZZ34EC		1	26		RUL5
STP Filler Pack	NT9X19EA		2	26	01F, 33F	RUL5
+5V Global Power Converter	NT9X30AB		2	26	04F, 36F	RUL5
Design Label (NT9X30AB)	P0738496		2	26	04F, 36F	RUL5
Redundant Power Converter	NTZZ34PB		1	26		RUL5
Filler Packfill	NT9X01FB		1	26		RUL5
Bulkhead Assembly	NT9X6534		2	26		RUL5
Cover Plate	NTEX5025		32	26		RUL5
F-Bus Extender PB	NT9X79AA		2	26	07R, 32R	RUL5
Design Label (NT9X79AA)	P0689621		2	26	07R, 32R	RUL5
F-Bus Ext with Term. PB	NT9X79BA		2	26	07R, 32R	RUL5
Design Label (NT9X79BA)	P0689622		2	26	07R, 32R	RUL5
CCS7 8 Meg LIU (E-DS0A)	NTZZ30AM			26	08F, 10F, 12F, 14F, 16F, 18F, 20F, 22F, 24F, 26F, 28F, 30F	RUL6
CCS7 8 Meg LIU (E/HC-DS0A)	NTZZ30BM			26	08F, 10F, 12F, 14F, 16F, 18F, 20F, 22F, 24F, 26F, 28F, 30F	RUL6
CCS7 8 Meg LIU (V.35)	NTZZ30CM			26	08F, 10F, 12F, 14F, 16F, 18F, 24F, 26F, 28F, 30F	RUL6
NIU	NTZZ30MA			26	18F, 20F,	RUL6
XLIU	NTZZ30NA			26	08F, 10F, 12F, 14F, 16F, 18F, 24F, 26F, 28F, 30F	RUL6
CCS7 8 Meg LIU (E/HC-DS0A)	NTZZ30TB			26	08F, 10F, 12F, 14F, 16F, 18F, 20F, 22F, 24F, 26F, 28F, 30F	RUL6
Ethernet I/F Unit	NTZZ30EC			26	08F, 10F, 12F, 14F, 16F, 18F, 20F, 22F,	RUL6

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
					24F, 26F, 28F, 30F	
Filler Face Plate	NT9X19AA		26	26	07F-32F	RUL6
PB Filler Face Plate	NT9X19BA		26	26	07R-32R	RUL6
Shelf Strip LIS (rear, top)	P0739096		1	26		AP
Shelf Strip LIS (rear, bot)	P0739095		1	26		AP
Design.Strip LIS (front, top)	P0739097		1	26		AP
Shelf Strip LIS (front)	P0739094		1	26		AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
ENI Shelf Assembly	NT9X0810		1	13		AP
Filler Packfill	NT9X01FB		1	13		RUL7
Bulkhead Assembly (left)	NT9X6520		1	13		RUL7,9
Bulkhead Assembly (right)	NT9X6521		1	13		RUL7,9
Bulkhead Assembly (left)	NT9X6530		1	13		RUL7,9
Bulkhead Assembly (right)	NT9X6531		1	13		RUL7,9
Bulkhead Assembly	NT9X0813		2	13		RUL7,9
Streamline Bulkhead Assembly	NT9X8909		2	13		RUL7,9
DMS SNSE ENI F-Bus Common CP	NTZZ34GB		1	13		RUL8
DMS SNSE ENI Common CP	NTZZ34KA		1	13		RUL9
DMS SNSE 4K ENET	NTZZ34FA		1	13		RUL9
8K Crosspoint CP	NT9X35FA			13	14F-19F, 24F-29F	RUL9
4-Port DS512 Fiber I/F PB	NT9X40BB			13	14R-19R, 24R-29R	RUL9
16-Port DS30 PB	NT9X41BA			13	14R-19R, 24R-29R	RUL9
3-Port DS512 16-Port DS30 PB	NT9X45BA			13	14R-19R, 24R-29R	RUL9
Cable Assembly	NT9X0520			13		RUL9
Cable Assembly	NT9X0524			13		RUL9
Cable Assembly	NT9X0540			13		RUL9
Cable Assembly	NT9X0542			13		RUL9
Cable Assembly (Meridian)	NT9X0815			13		RUL9
Cable Assembly (Meridian)	NT9X0817			13		RUL9
Cable Assy (Streamline, XPM)	NT9X0546			13		RUL9
Cable Assy (Streamline, SLC)	NT9X0544			13		RUL9
Cable Assy (Streamline, XPM)	NT9X0547			13		RUL9
Cable Assy (Streamline, SLC)	NT9X0545			13		RUL9
Design Label (NT9X35FA)	P0735098			13	14F-19F, 24F-29F	RUL12
Design Label (NT9X40BB)	P0734155			13	14R-19R, 24R-29R	RUL12
Design Label (NT9X41BA)	P0704528			13	14R-19R, 24R-29R	RUL12
Design Label (NT9X45BA)	P0731527			13	14R-19R, 24R-29R	RUL12
Optical Fiber Label(German)	P0737638		4	30		AP
Shelf Strip, ENI (front)	P0739099		1	13		AP-03
Shelf Strip, ENI (rear, bot)	P0739100		1	13		AP
Shelf Strip, ENI (rear, top)	P0739101		1	13		AP
Design Strip, ENI (front)	P0739102		1	13		AP
Design Strip, ENI (rear)	P0735786		1	13		AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Cmp Mod Sys Load Mod Sh Assy	NT9X0610		1	00		AP-01
+5V/+12V Power Conv	NT9X91AC		2	00	01F, 36F	AP
+5V/-5V Power Conv	NTDX15AB		2	00	04F, 33F	AP
System Load Module 1A	NT9X44AC		2	00	07F, 28F	AP
#CPU Port CP	NT9X12AD		2	00	17F, 22F	AP
Des. Labels (NT9X12AD)	P0725905		2	00	17F, 22F	AP
Dual Port Msg Controller CP	NT9X86AA		2	00	18F, 21F	RUL15
Dual Port Msg Controller CP	NT9X86AB		2	00	18F, 21F	RUL15
CM Processor CP	NT9X13MB		2	00	19F, 20F	RUL10
Des. Labels(NT9X13MB)	P0737298		2	00	19F, 20F	RUL12
BRISC Processor (SE 60) CP	NT9X10AA		2	00	19F, 20F	RUL10
Des. Labels(NT9X10AA)	P0734152		2	00	19F, 20F	RUL12
#BRISC Processor (SE 70) CP	NT9X10BA		2	00	19F, 20F	RUL10
Des. Labels (NT9X10BA)	P0806211		2	00	19F, 20F	RUL12
Parallel Port Interface PB	NT9X46AA		4	00	07R, 17R 22R, 28R	AP
P-Bus Terminator PB	NT9X21AB		2	00	12R, 27R	AP
2-Link SR512 PB	NT9X62AA		2	00	18R, 21R	AP
RTIF PB for NT9X13MB	NT9X26AB		2	00	19R, 20R	RUL10
Des. Labels (NT9X26AB)	P0705003		2	00	19R, 20R	RUL12
RTIF PB for SE 60	NT9X26DB		2	00	19R, 20R	RUL10
Des. Labels (NT9X26DB)	P0747896		2	00	19R, 20R	RUL12
#RTIF PB for SE 70	NT9X26EA		2	00	19R, 20R	RUL10
Des. Labels (NT9X26EA)	P0806223		2	00	19R, 20R	RUL12
CM Extension Cable Assembly	NT9X0167		2	00		AP
E/W 2-25 Pin Cable Assembly	NT9X0160		2	00		AP
RS-232C/Curr Loop Cable Assy	NT9X0196		2	00		AP
Cable Assembly	A0379486		8	00		AP
96 Meg Memory CP	NT9X14EA			00	12F-16F, 23F-27F	RUL10
Design Label (NT9X14EA)	P0736863			00	12F-16F, 23F-27F	RUL12
Filler Face Plate	NT9X19AA			00		RUL4
PB Filler Face Plate	NT9X19BA			00		RUL4
ENET/W-CM Bulkhead Assembly	NT9X6552		2	00		RUL7, 9
CM/SLM Bulkhead Assembly	NT9X6553		2	00		RUL7, 9
CM Design. Strip (rear)	P0735782		1	00		AP-01
CM Design. Strip (rear,bot)	P0739105		1	00		AP-01
Shelf Strip, CM/SLM (rear,t)	P0739106		1	00		AP-01
Design Strip, CM/SLM (front)	P0739107		1	00		AP-01
Cabinet Power Filter Label	P0736059		1			RUL16
Cabinet Mechanical Hardware						RUL13
End Panel Assy Kit (Brown)	NTRX07AE		2			RUL13
End Panel Assy Kit (Grey)	NTRX07AB		2			RUL13
Frame Sup.Panel (-60V)	NT9X03BA	FSP	1	52		AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Cooling Unit (-60V)	NT9X95GU	CU	1	00		AP
Stand-alone Power Cab. kit	NT9X9532		1			RUL14
Horizontal Power Cab.kit	NT9X9531		1			RUL14
EMI Contact Strips	P0714698		2			RUL14
C42 Cabinet Mechanical Assy	NT9X95BA					NOTE1

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT9X12AC NT9X13MA NT9X10BA NT9X26EA	MD MD DEV DEV	NT9X12AD NT9X13MB

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) Refer to NT9X95BA (EMA4-07-001) for additional mechanical hardware requirements for C42 Cabinet.

RULES:

- AP 1) When PEC NTZZ34MD is ordered, these items are provided.
- AP-01 1) These items are provided with NT9X01MB and are listed here for reference.
- AP-02 1) These items are provided with NT9X7204 and are listed here for reference.

AP-03 1) These items are provided with NT9X0810 and are listed here for reference.

- RUL1
- 1) If ASUs are provisioned on either the LIS or ENI shelf, provide one (1) NTZZ34CA DMS SuperNode SE MS LIS/ENI Interface.
 - 2) To connect the F-BUS from the MS to the LIS shelf only, provide two (2) NT9X7211 F-BUS Cables (LE) and two (2) NT9X7213 F-BUS Cables (RI).
 - 3) To connect the F-BUS from the MS to the ENI and optional LIS, provide two (2) NT9X7210 F-BUS Cables (LE) and two (2) NT9X7212 F-BUS Cables (RI).
 - 4) If there are no ASUs in the LIS or ENI shelf, there is no need to extend the F-Bus from the MS down to the LIS or ENI shelves, in which case, do not order NTZZ34CA Building Block.
- RUL2
- 1) SuperNode SE supports up to six IOCs when configured for the LEC/IEC markets, and up to eight IOCs in the MTX markets. IOC 0, IOC 1, and 2 mandatory Inter-Message-Links (IML), must always be on slot 10 for plane 0 & slot 29 for plane 1.
 - 2) To provision Message Switch for up to two (2) IOCs, equip slots 10F and 29F with NT9X17AD (4 Port MS Interface card) port cards and 10R and 29R with NT9X23AA (4 Link DS-30 Paddle Boards).
 - 3) To provision Message Switch with more than two (2) IOCs and up to eight (8) IOCs, equip slots 10F and 29F with NT9X17BB (32 Port MS Interface card) port cards and 10R and 29R with NT9X69BA (16 Link DS-30 Paddle Boards).
 - 4) To provision Message Switch with up to three (3) LPPs, without JNET, equip slots 10F,11F and 29F,28F with NT9X17BB (32 Port MS Interface card) port cards and 10R,11R and 29R,28R with NT9X69BA (16 Link DS-30 Paddle Boards).
 - 5) The maximum number of JNET network modules that may be provisioned is seven (7) for LEC/IEC markets, except for MSL applications where the limit is ten (10). To support up to four (4) JNET network modules,without LPP, provision one (1) NTZZ34JA DMS SuperNode SE MS 8xDS30 Interface. To support up to ten (10) JNET network modules, and or up to three (3) LPPs, provision one (1) NTZZ34DA DMS SuperNode SE MS 32xDS30 Interface.
 - 6) Bulkheads MUST ALWAYS be job engineered on the MS shelf.

- 7) For Meridian initials which are not SNSE retrofit, and for non-Cabinetized applications, the NT9X6550 and NT9X6551 Bulkheads can be used, when NT9X23AA PBs are used in slots 10 thru 12 for Plane 0 and in slots 29 thru 27 for Plane 1.
- For non-Cabinetized and Meridian Initials, provision,
 - NT9X0434 DS30 Cable Assemblies for each 9X23AA provisioned.
 - NT9X0520 DS30 Cable Assemblies for each 9X69BA provisioned.
 - Also provision one of the three following IML Cable or Fiber links:
 - two (2) NT9X0475 IML DS30 Cable Assemblies (for overhead)
 - two (2) NT9X0433 IML DS30 Cable Assemblies (for raised floor)
 - two (2) A0630023 IML DS512 Fiber links for FP Billing Server applications.

Note that NT9X0434 cables are to be used only with NT9X23AA.

- 8) NT9X6560 and NT9X6561 bulkheads can be used when NT9X23AA PBs are used in slots 10 thru 14 for Plane 0 and in slots 29 thru 25 for Plane 1 for existing Meridian offices. Note that NT9X69BA cannot be used with NT9X6560 and 6561 bulkheads.
- For Existing Meridian applications, provision
 - one (1) NT9X0478 IML IOC0 Cable Assembly(right)
 - one (1) NT9X0479 IML IOC1 Cable Assemblies(left)
 - NT9X0474 DS30 Cable Assembly for each 9X23AA provisioned in slots 11 thru 14 for Plane 0 and in slots 28 thru 25 for Plane 1, only for IOCs.
 - NT9X0182 DS30 Cable Assemblies for each pair of 23AAs provisioned in slots 11 thru 14 for Plane 0 and in slots 28 thru 25 for Plane 1.
- 9) NT9X6567 and NT9X6568 bulkheads can be used when NT9X23AA/69BA PBs are used for Cabinetized(streamline) offices. Provision one (1) NTEX5070 cover plate for each unused cable positions in NT9X6567 and NT9X6558 bulkheads.
- For Streamline application provision,
 - one (1) NT9X6544 IML IOC0 Cable Assembly for 23AA in slot 10 for Plane 0.
 - one (1) NT9X6544 IML IOC1 Cable Assembly for 23AA in slot 29 for Plane 1.

(OR)

- one (1) NT9X0483 14 port Cable Assembly for 69BA in slot 10R for Plane 0.
- one (1) NT9X0487 6 port Cable Assembly for 69BA in slot 11R for Plane 0.
- one (1) NT9X0483 14 port Cable Assembly for 69BA in slot 29R for Plane 1.
- one (1) NT9X0487 6 port Cable Assembly for 69BA in slot 28R for Plane 1.

AND

- two (2) NT9X0489 IML DS30 Cable Assemblies (for overhead)
- two (2) NT9X0488 IML DS30 Cable Assemblies (for raised floor)

Note that JNET is NOT supported with SNSE in streamline application.

Connectors C0-C3;D0-D3;and E0-E3 in the NT9X6567/68 BHs are used for LPP 0, 1 and 2 respectively.

RUL3 1) Message Switch Configurations

The range of port cards and paddle boards that are supported by the SuperNode SE allows it to be configured with up to 8 Input/Output Controllers (IOC), 2 mandatory Inter-Message-Links (IML), up to 3 Link Peripheral Processors (LPP), and either a fully equipped 16K channel Enhanced Network (ENET) or up to 7 junctored Network Modules (JNET/NMs). Note that MSL Cabinet packaged systems can support upto 10 NMs. Where ENET 16K is used, the message switch also provides two slots for interfaces to Application/File Processors(AP/FP) and or Single Shelf LPPs (SSLPP or FLIS) external to the SNSE cabinet.

To Provision Message Switch for internal LIS interface, equip slots 8F and 31F with NT9X73BA (Rate Adapter CP) and 8R and 31R with NT9X79BA, F-Bus Extender Paddle Board.

		ENET	JNET	JNET
	MS SLOTS	MS P-side ports < than 256	1 - 4 Network Modules	5 - 7 Net. Mod. OR 10NMs for MSL appl.
2 IMLs 2 IOCs & 0 LPP & 1 FLIS	10 & 29 11 & 28 12 & 27 13 & 26 14 & 25 15 & 24	17AD/23AA 17AD/62BA *17DA/62CA 17DA/62CA	17AD/23AA 17AD/23AA 17AD/23AA 17AD/62BA	17AD/23AA 17BB/69BA 17BB/69BA 17AD/62BA
2 IMLs up to 8 IOcs & 0 LPPs	10 & 29 11 & 28 12 & 27 13 & 26 14 & 25 15 & 24	17BB/69BA *17DA/62CA 17DA/62CA	17BB/69BA 17AD/23AA 17AD/23AA	17BB/69BA 17BB/69BA 17BB/69BA
2 IMLs up to 8 IOcs & 3 LPPs	10 & 29 11 & 28 12 & 27 13 & 26 14 & 25 15 & 24	17BB/69BA 17BB/69BA *17DA/62CA 17DA/62CA	17BB/69BA 17BB/69BA 17BB/69BA	17BB/69BA 17BB/69BA 17BB/69BA

Note that the SuperNode SE can support either ENET or JNET configurations. It cannot support mixed ENET and JNET configurations, because JNET cannot interwork with ENET. Note that JNET is NOT supported with SNSE in streamline application.

* See the next table.

- 2) Use the following table to provide the circuit packs necessary for the required maximum number of MS and ENET ports.

The ENET interface provisioning is determined by the number of peripheral message channels required per ENET plane and is shown below.

P-side ports/ MS Plane	P-Side Peripheral Msg channels per ENET Pl.	slot 15 & 24		slot 14 & 25	
		Front Front	Rear Rear	Front Front	Rear Rear
32	< or = 15	17BB	62CA	-	-
64	< or = 31	17BB 17DA	62CA 62CA	17BB -	62CA/25BA -
96	< or = 47	17DA	62CA	17BB	62CA/25BA
128	< or = 63	17DA 17CA	62CA 62CA	17DA -	62CA/25BA -
256	< or = 127	17CA	62CA	17CA	62CA/25BA

The circuit pack fill order is:

- 1) 15F/R (MS 0) and 24F/R (MS 1),
- 2) 14F/R (MS 0) and 25F/R (MS 1).

The NT9X17CA is a 128 port card that has attained General Availability (GA) in BCS36.

The NT9X25BA MS Port Expander with Terminations paddleboard can only be used for Message Port growth on SNSE extensions. All initial jobs must use the NT9X62CA paddleboard.

3) SR512 Ports

Slots 13 and 26 are always available for additional functionality (That is AP/FP/SSLPP).

To add FLIS provide, two (2) NT9X17AD and two (2) NT9X62BA.
To add AP/FP provide, two (2) NT9X17DA and two (2) NT9X62BA.

- RUL4 1) Provision NT9X19AA Filler Face Plates and NT9X19BA Paddleboard Filler Face Plates for all unoccupied slots.

- RUL5 1) Provide one (1) NTZZ34EC DMS SNSE LIS Common CP in shelf position 26 if LIUs are to be provisioned for -60V applications.

If LIUs are equipped on the LIS and ENI shelves, provide:
two (2) NT9X79AA F-Bus Extender Paddleboards and,
two (2) NT9X79AA Des. Labels (P0689621).
These items extend the F-Bus on to the ENI shelf.

If LIUs are equipped on the LIS shelf only, provide:
two (2) NT9X79BA F-Bus Extender with BUS Termination PBs
two (2) NT9X79BA Des. Labels (P0689622).
The NT9X79BA terminate the F-Bus on the LIS shelf.

Provision one (1) NTEX5025 Cover Plate for each unused cable position on the NT9X6534 Bulkhead Assemblies. There are a total of 32 cable connector positions on the bulkheads, 16 on each side.

- 2) If ASU functionality is not required on the LIS shelf, provide one (1) NT9X01FB Filler Packfill, two (2) NT9X6534 LIS Bulkhead Assemblies, and thirty-two (32) NTEX5025 Cover Plates.

Bulkheads MUST ALWAYS be ordered on the LIS shelf, even if fillers are the only packs shipped with the SuperNode SE cabinet.

The NT9X01FB filler packfill contains:

- four (4) NT9X19CA Power Filler Face Plates,
- two (2) NT9X0314 FSP Shorting Plugs (B0225296),
- twenty-six (26) NT9X19AA Filler Face Plates and
- twenty-six (26) NT9X19BA Paddleboard Filler Face Plates,

- 3) Provide two (2) NT9X30AB Global Power Converters, two (2) STP Power Filler CP and two (2) Designation labels (P0738496) for standard applications,
or one (1) Redundant Power Converter (NTZZ34PB) when dual redundancy for the powering of the LIS shelf is required by the Customer.

- RUL6 1) A total of up to twelve (12) LIUs may be provisioned on the LIS. Provision any combination of:
NTZZ30UA CCS7 8 Meg LIU (E-DS0A)
NTZZ30VA CCS7 8 Meg LIU (E/HC-DS0A)
NTZZ30CM CCS7 8 Meg LIU (V.35)
NTZZ30TB CCS7 8 Meg LIU (E/HC-DS0A/LFS)
NTZZ30EC Ethernet Interface Unit
- 2) Provide NT9X19AA Front Filler circuit packs and NT9X19BA Rear Filler paddleboards for all unequipped slots in the LIS shelf.
- 3) Provide one NTZZ30EC for each Ethernet interface required.
- RUL7 1) If ENET or LIU functionality is not required in the ENI shelf, and the cabinet is to be shipped with an empty ENI Shelf Assembly, provide one (1) NT9X01FB Filler Packfill, two (2) ENI bulkheads, and two (2) NT9X6553 CM/SLM bulkheads.

The NT9X01FB filler packfill contains:

- four (4) NT9X19CA Power Filler Face Plates,
- two (2) NT9X0314 FSP Shorting Plugs (B0225296),
- twenty-six (26) NT9X19AA Filler Face Plates and
- twenty-six (26) NT9X19BA Paddleboard Filler Face Plates,

Bulkheads MUST ALWAYS be provided on the ENI shelf, even if fillers are the only packs shipped in the ENI shelf.

Bulkheads MUST ALWAYS be provided on the CM/SLM shelf.

- 2) The ENI and CM/SLM bulkheads are provisioned as follows:

BULKHEAD PROVISIONING

The ENI bulkheads have different connectors for non-Cabinetized, Meridian as well as Streamline applications. The bulkhead NT9X6553 is the common CM/SLM bulkhead for Standard, Meridian and Streamline applications.

The NT9X6520/21 pair always requires the NT9X6553 CM/SLM bulkhead for 1 to 48 DS30 links. The NT9X6520/21 pair always requires the NT9X6552 CM/SLM bulkhead for 49 to 96 DS30 links.

Choose one of the bulkhead options listed below:

For standard applications without an SLC, with up to 48 DS30 links provision:

one (1) NT9X6520 ENI Bulkhead Assembly (left),
one (1) NT9X6521 ENI Bulkhead Assembly (right) and
two (2) NT9X6553 CM/SLM Bulkhead Assemblies.
The NT9X6553 CM/SLM bulkheads have no DS30 connection capability.

For standard applications without an SLC, with more than 48 DS30 links, but less than or equal to 96 DS30 links provision:

one (1) NT9X6520 ENI Bulkhead Assembly (left),
one (1) NT9X6521 ENI Bulkhead Assembly (right) and
two (2) NT9X6552 CM/SLM Bulkhead Assemblies
The NT9X6552 CM/SLM bulkheads have extra DS-30 connection capacity.

For standard applications with an SLC, and with more than 48 DS30 links, but less than or equal to 112 DS30 links provision:

one (1) NT9X6530 ENI Bulkhead Assembly (left),
one (1) NT9X6531 ENI Bulkhead Assembly (right) and
two (2) NT9X6553 CM/SLM Bulkhead Assemblies.

The CM bulkhead is required when the DS-30 channel capacity exceeds 48 DS-30s per ENET plane, without an SLC. Forty-eight DS-30s is the maximum connection capacity of a single NT9X6520/21 ENI bulkhead.

- 3) For Meridian applications, provision:
 - two (2) NT9X0813 Bulkhead Assemblies and
 - two (2) NT9X6553 CM/SLM Bulkhead Assemblies.
- 4) For Streamline applications, provision:
 - two (2) NT9X8909 Streamline Bulkhead Assemblies and
 - two (2) NT9X6553 CM/SLM Bulkhead Assemblies.

Note that, when using NT9X8909 ENI Bulkhead with Cabinetized TME without an SLC, only up to a maximum of 14 8-DS30 cables can be used.

- RUL8
- 1) If LIU functionality is required on the ENI shelf, and ENET has been provided, provision one (1) NTZZ34GB DMS SNSE ENI F-Bus Common CP.
 - 2) Due to an incompatibility problem, NONE of the following BB may be ordered at this time. This problem applies only to the ENI shelf, these same BB may be used on the LIS shelf:
NTZZ30UA CCS7 8 Meg LIU (E-DS0A),
NTZZ30VA CCS7 8 Meg LIU (E/HC-DS0A),
NTZZ30CM CCS7 8 Meg LIU (V.35)

NTZZ30TB CCS7 8 Meg LIU (E/HC-DS0A/LFS)
NTZZ30EC Ethernet Interface Unit
as required.

Note:

A total of up to two (2) LIUs may be provisioned on the ENI shelf.

The ENI shelf cannot support LIUs without the provisioning of an ENET. The reason for this restriction is that the ENET processor circuit packs control the power lock-out for the ENI shelf. If there are no ENET processor packs, there is no power supplied to the ENI shelf.

- RUL9 1) The minimum allowable ENET configuration is 4K, with 2K of the initial 4K channels assigned for messaging between the MS and the ENET. The ENET on SuperNode SE is only available in 4K, 8K, 12K and 16K configurations.
- 2) For a 4K ENET, provision one (1) NTZZ34FA DMS SNSE 4K ENET, one (1) NTZZ34KA DMS SNSE ENI Common CP and see item 6) below for cable provisioning requirements.

Provide front fillers (NT9X19AA) and paddleboard fillers (NT9X19BA) for all unprovisioned slots. All slots must be filled to ensure proper air flow for cooling.

- 3) For an 8K ENET, provision one (1) NTZZ34FA DMS SNSE 4K ENET, one (1) NTZZ34KA DMS SNSE ENI Common CP and four (4) NT9X35FA 8K Crosspoint Circuit Packs in slots 14F, 15F for Plane 0, and 24F and 25F for Plane 1.

Also provision any combination of NT9X40BB 4-Port DS512 Fiber Interface Paddleboards, NT9X41BA 16-Port DS30 Paddleboards and NT9X45BA 3-Port DS512 + 16-Port DS30 Paddleboards in slots 14R, 15R, 24R and 25R, provided that slots 14R and 24R have matching paddleboards and slots 15R and 25R also have matching paddleboards.

Also, see 6) below for cable provisioning requirements. Provide front fillers (NT9X19AA) and paddleboard fillers (NT9X19BA) for all unprovisioned slots. All slots must be filled to ensure proper air flow for cooling.

- 4) For a 12K ENET, provision one (1) NTZZ34FA DMS SNSE 4K ENET, one (1) NTZZ34KA DMS SNSE ENI Common CP, and eight (8) NT9X35FA 8K Crosspoint Circuit Packs in slots 14F to 17F for Plane 0 and 24F to 27F for Plane 1.

Also provision any combination of NT9X40BB 4 Port DS512 Fiber Interface Paddleboards, NT9X41BA 16-Port DS30 Paddleboards and NT9X45BA 3-Port DS512 16-Port DS30 Paddleboards in slots 14R to 17R and 24R to 27R, providing that matching paddleboards are used in each of the following pairs of slots:
14R and 24R; 15R and 25R;
16R and 26R; 17R and 27R.

The total number of NT9X41BA and NT9X45BA Paddleboards may not exceed four (4) per ENET plane for Meridian applications.

Also, see 6) below for cable provisioning requirements.

Provide front fillers (NT9X19AA) and paddleboard fillers (NT9X19BA) for all unprovisioned slots. All slots must be filled to ensure proper air flow for cooling.

- 5) For a 16K ENET, provision one (1) NTZZ34FA DMS SNSE 4K ENET, one (1) NTZZ34KA DMS SNSE ENI Common CP and twelve (12) NT9X35FA 8K Crosspoint Circuit Packs in slots 14F to 19F and 24F to 29F.

Also provision any combination of NT9X40BB 4-Port DS512 Fiber Interface Paddleboards, NT9X41BA 16-Port DS30 Paddleboards and NT9X45BA 3-Port DS512 16-Port DS30 Paddleboards in slots 14R to 19R and 24R to 29R, provided that matching paddleboards are used in each of the following pair of slots:
14R and 24R; 15R and 25R;
16R and 26R; 17R and 27R;
18R and 28R; 19R and 29R.

The total number of DS30 ports provided by the NT9X41BA and NT9X45BA Paddleboards may not exceed ninety-six (96) per ENET plane due to the limit of bulkhead cable connectors available to terminate DS30 links.

The total number of NT9X41BA and NT9X45BA Paddleboards may not exceed four (4) per ENET plane for Meridian applications.

The paddleboards in slots 19R and 29R can not be used for DS30 links if NT9X6520 and 6521 bulkheads are provisioned.

Also, see 6) below for cable provisioning requirements.

Provide front fillers (NT9X19AA) and paddleboard fillers (NT9X19BA) for all unprovisioned slots. All slots must be filled to ensure proper air flow for cooling.

- 6) For Standard applications, provision:

one (1) NT9X0520 Cable Assembly per NT9X41BA and

one (1) NT9X0524 Cable Assembly per NT9X45BA
(if the NT9X41BA or NT9X45BA is in slot 17R or 18R and requires DS30 connections to the CM bulkhead in position 00, use NT9X0540 instead of NT9X0520 and NT9X0542 instead of NT9X0524).

for Meridian applications, provision:

one (1) NT9X0815 Cable Assembly per NT9X41BA and

one (1) NT9X0817 Cable Assembly per NT9X45BA.

for up to 64 DS-30s.

For Streamline applications, provision:

one (1) NT9X0546 Cable Assembly per NT9X41BA and

one (1) NT9X0547 Cable Assembly per NT9X45BA

(when an SLC is provided, use NT9X0544 instead of NT9X0546 and use NT9X0545 instead of NT9X0547).

Both of the above cabling scenarios for Streamline allow the termination of up to 112 DS-30 links.

Note:

The NT9X40BB only has fiber ports and fiber cables do not terminate on the bulkhead. The cables from this paddleboard go through a hole in the bulkhead and connect directly to the fiberized peripheral.

7) BULKHEAD PROVISIONING

The ENI bulkheads have different connectors for Standard, Meridian as well as Streamline applications. The bulkhead NT9X6553 is the common CM/SLM bulkhead for Standard, Meridian and Streamline applications.

The NT9X6520/21 pair always requires the NT9X6553 CM/SLM bulkhead for 1 to 48 DS30 links. The NT9X6520/21 pair always requires the NT9X6552 CM/SLM bulkhead for 49 to 96 DS30 links.

The ENI and CM/SLM bulkheads are provisioned as follows:
Choose one of the bulkhead options listed below:

For standard applications without an SLC, with up to 48 DS30 links provision:

one (1) NT9X6520 ENI Bulkhead Assembly (left),

one (1) NT9X6521 ENI Bulkhead Assembly (right) and

two (2) NT9X6553 CM/SLM Bulkhead Assemblies.

The NT9X6553 CM/SLM bulkheads have no DS30 connection capability.

For standard applications without an SLC, with more than 48 DS30 links, but less than or equal to 96 DS30 links provision:

one (1) NT9X6520 ENI Bulkhead Assembly (left),
one (1) NT9X6521 ENI Bulkhead Assembly (right) and
two (2) NT9X6552 CM/SLM Bulkhead Assemblies
The NT9X6552 CM/SLM bulkheads have extra DS-30 connection capacity.

For standard applications with an SLC, and with more than 48 DS30 links, but less than or equal to 112 DS30 links provision:

one (1) NT9X6530 ENI Bulkhead Assembly (left),
one (1) NT9X6531 ENI Bulkhead Assembly (right) and
two (2) NT9X6553 CM/SLM Bulkhead Assemblies.

The CM bulkhead is required when the DS-30 channel capacity exceeds 48 DS-30s per ENET plane, without an SLC. Forty-eight DS-30s is the maximum connection capacity of a single NT9X6520/21 ENI bulkhead.

- RUL10 1) For new jobs at BCS35 and higher, provide the NT9X13MB processor circuit boards. The NT9X13MB Processor provides ability to function with either NT9X14EA (96 Meg memory) or NT9X14DB (24 Meg memory), but not both. That is NT9X14DB and NT9X14EA WILL NOT be supported in a mixed configuration. Check availability prior to ordering NT9X14EA. The RTIF PB NT9X26AB will have to be provisioned with NT9X13MB processor.
- 2) The SE 70 BRISC processor may be ordered if a higher capacity processor is required. Also NA004 is required as base software. The RTIF required for the SE 70 is the NT9X26EA. If a SE 70 processor is required, and the office is at CSP04 or higher, SLM III is required. The SE 70 contains 256 MBytes of memory onboard, no memory cards are required if the combined PS/DS is less than 224 MBytes. SE 70 is available only with NPI approval.
- 3) The 96 Meg memory cards are the recommended option on SNSE initials from BCS35 onwards. The 24 Meg memory will only be available on SNSE extensions.
- 4) The NT9X14EA memory boards have the capability to function in burst mode. Burst mode memory is required to fully utilize the Series 60 BRISC processor (BRISC available from BCS36 onward). The new RTIF NT9X26DB will have to be provisioned with this BRISC processor.
- 5) The NT9X14DB 24Mb circuit boards are to be provided for memory extensions of existing offices at BCS34. Note that 24Mb circuit boards do not function in burst mode.
- 6) Provision memory circuit packs in pairs, in slots in the following order:
- 1) 16F and 23F;
 - 2) 15F and 24F;
 - 3) 14F and 25F;
 - 4) 13F and 26F;
 - 5) 12F and 27F.

The number of pairs to be provisioned depends on the memory requirement for the office.

Processor	SE 20 NT9X13MA	SE 20 NT9X13MB	SE 60 NT9X10AA	SE 70 NT9X10BA
RTIF PB	NT9X26AB	NT9X26AB	NT9X26DB	NT9X26EA
Dual Port Msg	NT9X86AA	NT9X86AA	NT9X86AB	NT9X86AB
Memory	24 Meg. NT9X14DB	NT9X14DB OR NT9X14EA	96 Meg. NT9X14EA	96 Meg NT9X14EA
Port Card	NT9X12AC/ NT9X12AD	NT9X12AC/ NT9X12AD	NT9X12AD	NT9X12AD
Software Release	BCS 34	BCS 35	BCS 36	CSP004

SNSE BRISC 60 AND 70 Upgrades

Refer to the table above for BRISC upgrade requirements.

RUL11 Deleted

RUL12 1) Provide designation labels as required.

RUL13 1) Provide mechanical hardware for the S/DMS cabinet, such as end guards, frame isolating pads and anchors by using the Engineering Manual inserts:

NT9X95BA - Mechanical Hardware for S/DMS Cabinet,
NTRX73 - Cabinetized DMS Cosmetic Endguards
and EMI Sidepanels.

2) Provision two (2) NTRX07AB End Panel Assy Kits (Grey) for grey cabinets.

OR

3) Provision two (2) NTRX07AE End Panel Assy Kits (Brown) for brown cabinets.

4) Provide one (1) NT9X03BA, Frame Supervisory Panel, per Cabinet for -60V powered installations.

- 5) Provide one (1) NT9X95GU, Cooling Unit, per cabinet for -60V powered installations. This unit comes with 3 replaceable blower assemblies(A0382103), and a replaceable electronics module (A0383326) installed. However, customers may desire spares. The Cooling Unit mounts immediately below position 00.

- RUL14 1) Provide one (1) NT9X9532 stand-alone Cabling Interface Kit when powering the NT9X01MB cabinet from the 7 foot PDC frame OR powering from the new CPDC (NTRX31CA) cabinet, OR powering from the NTRX31AA or from the NTRX31BA CPDC cabinet which is in the different lineup than the NT9X01MB. This kit includes cables, filters, and miscellaneous mounting hardware.

Customers may require a spare EMI line filter (A0326932) per office, this filter is part of the stand-alone interface kit.

Twenty-two (22) white boots are included in the NT9X9532 stand-alone Cabling Interface Kit.

Note: The twenty-two white boots MUST NOT be installed on the manufacturing shop floor. The boots must be shipped separately (loose) and installed at the job site.

- 2) Provide one (1) NT9X9531 Horizontal Power Cabling Interface Kit when powering the NT9X01MB cabinet from the NTRX31AA or from the NTRX31BA CPDC cabinet which is in the same lineup as the NT9X01MB. This kit includes power cables, terminal blocks, and miscellaneous mounting hardware.

Always provide:

two (2) EMI contact strips (P0714698)
when providing the NT9X9531 Horizontal Power Cabling Interface Kit.

- RUL15 1) Provide two (2) NT9X86AA Dual Port Message Controllers when the CM Processor (NT9X13MA or NT9X13MB) is provided.
- 2) Provide two (2) NT9X86AB Dual Port Message Controllers when a BRISC processor (NT9X10AA/BA) is provided.
- RUL16 1) Provide one (1) P0736059 power filter label per SNSE cabinet when powering the SNSE cabinet in a non-Streamline lineup or in a Stand alone application.

DMS SUPERNODE SE COMBINED CABINET: (-60V)

PEC CODE: NTZZ34ME

CPC CODE: B0243018

| RATING: MD

REPLACES: Not Applicable

REPLACED BY:

ABBREVIATION NAME: SCC

ENGINEERING DESCRIPTION: The DMS SuperNode SE Combined Cabinet: (-60V) houses a Computing Module (CM), a System Load Module III (SLM III), a Message Switch (MS), an Enhanced Network (ENET) and a Link Interface Shelf (LIS).

The NTZZ34ME Building Block is for applications in markets that utilize -60V power.

REFERENCE DOCUMENTATION: SL9X01MB 01 01
MS9X01MB 01 16
SLZZ34MD 00 01
NTZZ34ME REL 01

MARKETS: Applicable markets:

Europe

ISSUE AUTHOR: NTI: Jerry Palmer Dept. 3471 (PPK)

MAIN CONTACT: NTI: Jerry Palmer Dept. 3471 (PPK)

NTZZ34ME EMC4-06-017 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
95 04 27	ECM 632 14	Initial Release of section. Introduce new SLM III subsystem in this BB.
95 08 23	ECM 632 15	Upgraded ENET interface table per ECD 018-44830. Added to requirements for SLM III software. Removed Frame Fail Lamps per ECD 018-45801. Added on-board memory info to SE 70 CPU.
95 11 07	ECM 632 16	Removed NTZZ30AM, NTZZ30BM, NTZZ30CM and NTZZ30TB from provisioning on the ENI shelf. ECD 018-46074. Update ENET interface table per MS and ET 114630. Add DS512 Fiber IML for AP/FP applications, ECD 018-44368. Add dual redundant power packs for LIS shelf per ECD 006-19337. Added Hardware/Software upgrades per ET32379. Show spare EMI line filter as part of Stand-alone Power kit per ET 80303.
96 01 05	ECM 632 17	Added NTZZ30EC, allows Ethernet Interface card provisioning per ECD 018-45721. Added Cabinet Power filter label per ET 32759. Remove NTZZ44LA and NTZZ44MA, replaced by detail power converters and NTZZ34PB.
96 03 28	ECM 632 18	MD section, replaced by NTZZ34AH.

The DMS SuperNode SE Combined Cabinet: (-60V) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
DMS SuperNode SE Core Cabnt	NT9X01MB		1			AP
Message Switch Shelf Assy	NT9X0470		1	39		AP-01
Global -5V, 20A Pow. Conv.	NT9X31AB		2	39	01F, 33F	AP
Global +5V, 86A Pow. Conv.	NT9X30AB		2	39	04F, 36F	AP
T-Bus Terminator CP	NT9X49CC		2	39	07F, 32F	AP
Mapper CP	NT9X15AA		2	39	09F, 30F	AP
4-Port MS I/F CP	NT9X17AD		2	39	10F, 29F	RUL2
32-Port MS I/F CP	NT9X17BB		2	39	10F, 29F	RUL2
4-Port MS I/F CP	NT9X17AD		2	39	16F, 23F	AP
MS Processor CP	NT9X13NA		2	39	17F, 22F	AP
#Combined Clock CP	NT9X53AC		2	39	18F, 21F	RUL15
DMS-Bus System Clock CP	NT9X53AD		2	39	18F, 21F	RUL15
T-Bus Access CP	NT9X52AA		2	39	19F, 20F	AP
4-Link DS30 PB	NT9X23AA		2	39	10R, 29R	RUL2
16-Link DS30 PB	NT9X69BA		2	39	10R, 29R	RUL2
32-Port MS I/F CP	NT9X17BB		2	39	11F, 28F	RUL2
(for upto 3 LPPs, no JNET)						
16-Link DS30 PB	NT9X69BA		2	39	11R, 28R	RUL2
(for upto 3 LPPs, no JNET)						
DMS SNSE MS LIS/ENI I/F	NTZZ34CA		1	39		RUL1
F-BUS Cab Assy 3-shelf (LE)	NT9X7210		2	39		RUL1
F-BUS Cab Assy 3-shelf (RI)	NT9X7212		2	39		RUL1
F-BUS Cab Assy 2-shelf (LE)	NT9X7211		2	39		RUL1
F-BUS Cab Assy 2-shelf (RI)	NT9X7213		2	39		RUL1
DMS SNSE MS 8xDS30 I/F	NTZZ34JA		1	39		RUL2
DMS SNSE MS 32xDS30 I/F	NTZZ34DA		1	39		RUL2
MS Bulkhead Assembly (left)	NT9X6550		1	39		RUL2
(for non-Cab & Mer. Initial)						
MS Bulkhead Assembly (right)	NT9X6551		1	39		RUL2
(for non-Cab & Mer. Initial)						
DS30 Cable Assembly	NT9X0434			39		RUL2
(For non-Cabinetized appl.)						
DS30 Cable Assembly	NT9X0520			39		RUL2
(with 69BA for non-Cab appl)						
DS30 IML DS30 Cable Ass.	NT9X0475		2	39		RUL2
(Overhead appl.)						
DS30 IML DS30 Cable Ass.	NT9X0433		2	39		RUL2
(Raised Floor appl.)						
DS512 IML AP/FP Fiber Link	A0630023		2	39	13R, 26R	RUL2
MS Bulkhead Assembly (left)	NT9X6560		1	39		RUL2
(Existing Meridian appl.)						
MS Bulkhead Assembly (right)	NT9X6561		1	39		RUL2
(Existing Meridian appl.)						

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
IML IOC0 Cable Assembly (Existing Meridian appl.)	NT9X0478		1	39		RUL2
IML IOC1 Cable Assembly (Existing Meridian appl.)	NT9X0479		1	39		RUL2
DS30 Cable Assembly (with 23AA for exi. Mer.)	NT9X0474			39		RUL2
DS30 Cable Assembly (23AA in pairs, exi. Mer.)	NT9X0182			39		RUL2
Cabinetized Bulkhead (left) (Streamline Application)	NT9X6567		1	39		RUL2
Cabinetized Bulkhead (right) (Streamline Application)	NT9X6568		1	39		RUL2
DS30 IML DS30 Cable Ass. (Cab.appl., Overhead appl.)	NT9X0489		2	39		RUL2
14 port DS30 cable assembly	NT9X0483			39		RUL2
6 port DS30 cable assembly	NT9X0487			39		RUL2
DS30 IML DS30 Cable Ass. (Cab.appl., Raised Flr. appl.)	NT9X0488		2	39		RUL2
IML IOC0 Cable Assembly (Cabinetized Application)	NT9X6544		1	39		RUL2
IML IOC1 Cable Assembly (Cabinetized Application)	NT9X6544		1	39		RUL2
Bulkhead Cover Plate	NTEX5070			39		RUL2
4-Port MS I/F CP	NT9X17AD		2	39	13F, 26F	RUL3
SR-512 Fiber Paddle Board	NT9X62BA		2	39	13R, 26R	RUL3
32-Port MS I/F CP	NT9X17BB		2	39	15F, 24F 14F, 25F	RUL3
DMS Bus 64 Port CP	NT9X17DA			39	15F, 24F 14F, 25F	RUL3
DMS Bus 128 Port CP	NT9X17CA			39	15F, 24F 14F, 25F	RUL3
2-Link SR512 PB	NT9X62CA			39	15R, 24R	RUL3
2-Link SR512 PB	NT9X62CA			39	14R, 25R	RUL3
2-Link SR512 PB	NT9X62CA		2	39	16R, 23R	AP
RTIF PB	NT9X26AB		2	39	17R, 22R	AP
Clock Interface PB	NT9X54AC		2	39	18R, 21R	AP
MS Clock Cable Assembly	NT9X0436		1	39		AP
MS Clock Cable Assembly	NT9X0437		1	39		AP
Cable Assembly	NT9X0438		4	39		AP
MS0-MS1 Cable Assembly	NTEX5026		1	39		AP
Filler Face Plate	NT9X19AA			39		RUL4
PB Filler Face Plate	NT9X19BA			39		RUL4
Design Label (NT9X17AD)	P0735096			39	10F, 29F	RUL12
Design Label (NT9X23AA)	P0678443			39	10R, 29R	RUL12
Design Label (NT9X17BB)	P0726962			39	10F, 29F	RUL12
Design Label (NT9X69BA)	P0726964			39	10R, 29R	RUL12

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Design Label (NT9X17BB)	P0726962			39	15F, 24F 14F, 25F	RUL12
Design Label (NT9X17DA)	P0707891			39	15F, 24F 14F, 25F	RUL12
Design Label (NT9X17CA)	P0678441			39	15F, 24F 14F, 25F	RUL12
Design Label (NT9X62CA)	P0735105			39	14R, 25R, 15R, 24R	RUL12
Shelf Strip, MS (rear, top)	P0739091		1	39		AP-01
Shelf Strip, MS (rear, bot)	P0739090		1	39		AP-01
MS Design. Strip (front)	P0739092		1	39		AP-01
MS Design. Strip (rear)	P0735784		1	39		AP-01

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Link Interface Shelf Assy	NT9X7204		1	26		AP
DMS SNSE LIS Common CP	NTZZ34EC		1	26		RUL5
STP Filler Pack	NT9X19EA		2	26	01F, 33F	RUL5
+5V Global Power Converter	NT9X30AB		2	26	04F, 36F	RUL5
Design Label (NT9X30AB)	P0738496		2	26	04F, 36F	RUL5
Redundant Power Converter	NTZZ34PB		1	26		RUL5
Filler Packfill	NT9X01FB		1	26		RUL5
Bulkhead Assembly	NT9X6534		2	26		RUL5
Cover Plate	NTEX5025		32	26		RUL5
F-Bus Extender PB	NT9X79AA		2	26	07R, 32R	RUL5
Design Label (NT9X79AA)	P0689621		2	26	07R, 32R	RUL5
F-Bus Ext with Term. PB	NT9X79BA		2	26	07R, 32R	RUL5
Design Label (NT9X79BA)	P0689622		2	26	07R, 32R	RUL5
CCS7 8 Meg LIU (E-DS0A)	NTZZ30AM			26	08F, 10F, 12F, 14F, 16F, 18F, 20F, 22F, 24F, 26F, 28F, 30F	RUL6
CCS7 8 Meg LIU (E/HC-DS0A)	NTZZ30BM			26	08F, 10F, 12F, 14F, 16F, 18F, 20F, 22F, 24F, 26F, 28F, 30F	RUL6
CCS7 8 Meg LIU (V.35)	NTZZ30CM			26	08F, 10F, 12F, 14F, 16F, 18F, 20F, 22F, 24F, 26F, 28F, 30F	RUL6
NIU	NTZZ30MA			26	18F, 20F,	RUL6
XLIU	NTZZ30NA			26	08F, 10F, 12F, 14F, 16F, 18F, 24F, 26F, 28F, 30F	RUL6
CCS7 8 Meg LIU (E/HC-DS0A) (Link Fault Sect.)	NTZZ30TB			26	08F, 10F, 12F, 14F, 16F, 18F, 20F, 22F, 24F, 26F, 28F, 30F	RUL6
Ethernet I/F Unit	NTZZ30EC			26	08F, 10F, 12F, 14F, 16F, 18F,	RUL6

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
					20F, 22F, 24F, 26F, 28F, 30F	
Filler Face Plate	NT9X19AA		26	26	07F-32F	RUL6
PB Filler Face Plate	NT9X19BA		26	26	07R-32R	RUL6
Shelf Strip LIS (rear, top)	P0739096		1	26		AP
Shelf Strip LIS (rear, bot)	P0739095		1	26		AP
Design.Strip LIS (front, top)	P0739097		1	26		AP
Shelf Strip LIS (front)	P0739094		1	26		AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
ENI Shelf Assembly	NT9X0810		1	13		AP
Filler Packfill	NT9X01FB		1	13		RUL7
Bulkhead Assembly (left)	NT9X6520		1	13		RUL7,9
Bulkhead Assembly (right)	NT9X6521		1	13		RUL7,9
Bulkhead Assembly (left)	NT9X6530		1	13		RUL7,9
Bulkhead Assembly (right)	NT9X6531		1	13		RUL7,9
Bulkhead Assembly	NT9X0813		2	13		RUL7,9
Streamline Bulkhead Assembly	NT9X8909		2	13		RUL7,9
DMS SNSE ENI F-Bus Common CP	NTZZ34GB		1	13		RUL8
DMS SNSE ENI Common CP	NTZZ34KA		1	13		RUL9
DMS SNSE 4K ENET	NTZZ34FA		1	13		RUL9
8K Crosspoint CP	NT9X35FA			13	14F-19F, 24F-29F	RUL9
4-Port DS512 Fiber I/F PB	NT9X40BB			13	14R-19R, 24R-29R	RUL9
16-Port DS30 PB	NT9X41BA			13	14R-19R, 24R-29R	RUL9
3-Port DS512 16-Port DS30 PB	NT9X45BA			13	14R-19R, 24R-29R	RUL9
Cable Assembly	NT9X0520			13		RUL9
Cable Assembly	NT9X0524			13		RUL9
Cable Assembly	NT9X0540			13		RUL9
Cable Assembly	NT9X0542			13		RUL9
Cable Assembly (Meridian)	NT9X0815			13		RUL9
Cable Assembly (Meridian)	NT9X0817			13		RUL9
Cable Assy (Streamline, XPM)	NT9X0546			13		RUL9
Cable Assy (Streamline, SLC)	NT9X0544			13		RUL9
Cable Assy (Streamline, XPM)	NT9X0547			13		RUL9
Cable Assy (Streamline, SLC)	NT9X0545			13		RUL9
Design Label (NT9X35FA)	P0735098			13	14F-19F, 24F-29F	RUL12
Design Label (NT9X40BB)	P0734155			13	14R-19R, 24R-29R	RUL12
Design Label (NT9X41BA)	P0704528			13	14R-19R, 24R-29R	RUL12
Design Label (NT9X45BA)	P0731527			13	14R-19R, 24R-29R	RUL12
Shelf Strip, ENI (front)	P0739099		1	13		AP-03
Shelf Strip, ENI (rear, bot)	P0739100		1	13		AP
Shelf Strip, ENI (rear, top)	P0739101		1	13		AP
Design Strip, ENI (front)	P0739102		1	13		AP
Design Strip, ENI (rear)	P0735786		1	13		AP

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Cmp Mod Sys Load Mod Sh Assy	NT9X0610		1	00		AP-01
+5V/+12V Power Conv	NT9X91AC		2	00	01F, 36F	AP
+5V/-5V Power Conv	NTDX15AB		2	00	04F, 33F	AP
System Load Module III	NT9X44AD		2	00	07F, 28F	AP
#CPU Port CP	NT9X12AD		2	00	17F, 22F	AP
Des. Labels (NT9X12AD)	P0725905		2	00	17F, 22F	AP
Dual Port Msg Controller CP	NT9X86AA		2	00	18F, 21F	RUL15
Dual Port Msg Controller CP	NT9X86AB		2	00	18F, 21F	RUL15
CM Processor CP	NT9X13MB		2	00	19F, 20F	RUL10
Des. Labels(NT9X13MB)	P0737298		2	00	19F, 20F	RUL12
BRISC Processor (SE 60) CP	NT9X10AA		2	00	19F, 20F	RUL10
Des. Labels(NT9X10AA)	P0734152		2	00	19F, 20F	RUL12
#BRISC Processor (SE 70) CP	NT9X10BA		2	00	19F, 20F	RUL10
Des. Labels (NT9X10BA)	P0806211		2	00	19F, 20F	RUL12
Parallel Port Interface PB	NT9X46AA		4	00	07R, 17R 22R, 28R	AP
P-Bus Terminator PB	NT9X21AB		2	00	12R, 27R	AP
2-Link SR512 PB	NT9X62AA		2	00	18R, 21R	AP
RTIF PB for NT9X13MB	NT9X26AB		2	00	19R, 20R	RUL10
Des. Labels (NT9X26AB)	P0705003		2	00	19R, 20R	RUL12
RTIF PB for SE 60	NT9X26DB		2	00	19R, 20R	RUL10
Des. Labels (NT9X26DB)	P0747896		2	00	19R, 20R	RUL12
#RTIF PB for SE 70	NT9X26EA		2	00	19R, 20R	RUL10
Des. Labels (NT9X26EA)	P0806223		2	00	19R, 20R	RUL12
CM Extension Cable Assembly	NT9X0167		2	00		AP
E/W 2-25 Pin Cable Assembly	NT9X0160		2	00		AP
RS-232C/Curr Loop Cable Assy	NT9X0196		2	00		AP
Cable Assembly	A0379486		8	00		AP
96 Meg Memory CP	NT9X14EA			00	12F-16F, 23F-27F	RUL10
Design Label (NT9X14EA)	P0736863			00	12F-16F, 23F-27F	RUL12
Filler Face Plate	NT9X19AA			00		RUL4
PB Filler Face Plate	NT9X19BA			00		RUL4
ENET/W-CM Bulkhead Assembly	NT9X6552		2	00		RUL7,9
CM/SLM Bulkhead Assembly	NT9X6553		2	00		RUL7,9
CM Design. Strip (rear)	P0735782		1	00		AP-01
CM Design. Strip (rear,bot)	P0739105		1	00		AP-01
Shelf Strip, CM/SLM (rear,t)	P0739106		1	00		AP-01
Design Strip, CM/SLM (front)	P0739107		1	00		AP-01
Optical Fiber Label(German)	P0737638		4			AP
Cabinet Power Filter Label	P0736059		1			RUL16
Cabinet Mechanical Hardware						RUL13
End Panel Assy Kit (Brown)	NTRX07AE		2			RUL13
End Panel Assy Kit (Grey)	NTRX07AB		2			RUL13

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Frame Sup.Panel (-60V)	NT9X03BA	FSP	1	52		AP
Cooling Unit (-60V)	NT9X95GU	CU	1	00		AP
Stand-alone Power Cab. kit	NT9X9532		1			RUL14
Horizontal Power Cab.kit	NT9X9531		1			RUL14
EMI Contact Strips	P0714698		2			RUL14
C42 Cabinet Mechanical Assy	NT9X95BA					NOTE1

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT9X12AC NT9X13MA NT9X10BA NT9X26EA	MD MD DEV DEV	NT9X12AD NT9X13MB

DEV - DEVELOPMENT. These products are in the development phase.
Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if
they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufac-
tured and cannot be ordered.

NOTES:

- 1) Refer to NT9X95BA (EMA4-07-001) for additional mechanical
hardware requirements for C42 Cabinet.

RULES:

- AP 1) When PEC NTZZ34ME is ordered, these items are provided.
- AP-01 1) These items are provided with NT9X01MB and are listed here
for reference.

- AP-02 1) These items are provided with NT9X7204 and are listed here for reference.
- AP-03 1) These items are provided with NT9X0810 and are listed here for reference.

- RUL1
- 1) If ASUs are provisioned on either the LIS or ENI shelf, provide one (1) NTZZ34CA DMS SuperNode SE MS LIS/ENI Interface.
 - 2) To connect the F-BUS from the MS to the LIS shelf only, provide two (2) NT9X7211 F-BUS Cables (LE) and two (2) NT9X7213 F-BUS Cables (RI).
 - 3) To connect the F-BUS from the MS to the ENI and optional LIS, provide two (2) NT9X7210 F-BUS Cables (LE) and two (2) NT9X7212 F-BUS Cables (RI).
 - 4) If there are no ASUs in the LIS or ENI shelf, there is no need to extend the F-Bus from the MS down to the LIS or ENI shelves, in which case, do not order NTZZ34CA Building Block.
- RUL2
- 1) SuperNode SE supports up to six IOCs when configured for the LEC/IEC markets, and up to eight IOCs in the MTX markets. IOC 0, IOC 1, and 2 mandatory Inter-Message-Links (IML), must always be on slot 10 for plane 0 & slot 29 for plane 1.
 - 2) To provision Message Switch for up to two (2) IOCs, equip slots 10F and 29F with NT9X17AD (4 Port MS Interface card) port cards and 10R and 29R with NT9X23AA (4 Link DS-30 Paddle Boards).
 - 3) To provision Message Switch with more than two (2) IOCs and up to eight (8) IOCs, equip slots 10F and 29F with NT9X17BB (32 Port MS Interface card) port cards and 10R and 29R with NT9X69BA (16 Link DS-30 Paddle Boards).
 - 4) To provision Message Switch with up to three (3) LPPs, without JNET, equip slots 10F,11F and 29F,28F with NT9X17BB (32 Port MS Interface card) port cards and 10R,11R and 29R,28R with NT9X69BA (16 Link DS-30 Paddle Boards).
 - 5) The maximum number of JNET network modules that may be provisioned is seven (7) for LEC/IEC markets, except for MSL applications where the limit is ten (10). To support up to four (4) JNET network modules,without LPP, provision one (1) NTZZ34JA DMS SuperNode SE MS 8xDS30 Interface. To support up to ten (10) JNET network modules, and or up to three (3) LPPs, provision one (1) NTZZ34DA DMS SuperNode SE MS 32xDS30 Interface.
 - 6) Bulkheads MUST ALWAYS be job engineered on the MS shelf.

- 7) For Meridian initials which are not SNSE retrofit, and for non-Cabinetized applications, the NT9X6550 and NT9X6551 Bulkheads can be used, when NT9X23AA PBs are used in slots 10 thru 12 for Plane 0 and in slots 29 thru 27 for Plane 1.
- For non-Cabinetized and Meridian Initials, provision,
 - NT9X0434 DS30 Cable Assemblies for each 9X23AA provisioned.
 - NT9X0520 DS30 Cable Assemblies for each 9X69BA provisioned.
 - Also provision one of the three following IML Cable or Fiber links:
 - two (2) NT9X0475 IML DS30 Cable Assemblies (for overhead)
 - two (2) NT9X0433 IML DS30 Cable Assemblies (for raised floor)
 - two (2) A0630023 IML DS512 Fiber links for FP Billing Server applications.

Note that NT9X0434 cables are to be used only with NT9X23AA.

- 8) NT9X6560 and NT9X6561 bulkheads can be used when NT9X23AA PBs are used in slots 10 thru 14 for Plane 0 and in slots 29 thru 25 for Plane 1 for existing Meridian offices. Note that NT9X69BA cannot be used with NT9X6560 and 6561 bulkheads.
- For Existing Meridian applications, provision
 - one (1) NT9X0478 IML IOC0 Cable Assembly(right)
 - one (1) NT9X0479 IML IOC1 Cable Assemblies(left)
 - NT9X0474 DS30 Cable Assembly for each 9X23AA provisioned in slots 11 thru 14 for Plane 0 and in slots 28 thru 25 for Plane 1, only for IOCs.
 - NT9X0182 DS30 Cable Assemblies for each pair of 23AAs provisioned in slots 11 thru 14 for Plane 0 and in slots 28 thru 25 for Plane 1.
- 9) NT9X6567 and NT9X6568 bulkheads can be used when NT9X23AA/69BA PBs are used for Cabinetized(streamline) offices. Provision one (1) NTEX5070 cover plate for each unused cable positions in NT9X6567 and NT9X6558 bulkheads.
- For Streamline application provision,
 - one (1) NT9X6544 IML IOC0 Cable Assembly for 23AA in slot 10 for Plane 0.
 - one (1) NT9X6544 IML IOC1 Cable Assembly for 23AA in slot 29 for Plane 1.

(OR)

- one (1) NT9X0483 14 port Cable Assembly for 69BA in slot 10R for Plane 0.
- one (1) NT9X0487 6 port Cable Assembly for 69BA in slot 11R for Plane 0.
- one (1) NT9X0483 14 port Cable Assembly for 69BA in slot 29R for Plane 1.
- one (1) NT9X0487 6 port Cable Assembly for 69BA in slot 28R for Plane 1.

AND

- two (2) NT9X0489 IML DS30 Cable Assemblies (for overhead)
- two (2) NT9X0488 IML DS30 Cable Assemblies (for raised floor)

Note that JNET is NOT supported with SNSE in streamline application.

Connectors C0-C3;D0-D3;and E0-E3 in the NT9X6567/68 BHs are used for LPP 0, 1 and 2 respectively.

RUL3 1) Message Switch Configurations

The range of port cards and paddle boards that are supported by the SuperNode SE allows it to be configured with up to 8 Input/Output Controllers (IOC), 2 mandatory Inter-Message-Links (IML), up to 3 Link Peripheral Processors (LPP), and either a fully equipped 16K channel Enhanced Network (ENET) or up to 7 junctored Network Modules (JNET/NMs). Note that MSL Cabinet packaged systems can support upto 10 NMs. Where ENET 16K is used, the message switch also provides two slots for interfaces to Application/File Processors(AP/FP) and or Single Shelf LPPs (SSLPP or FLIS) external to the SNSE cabinet.

To Provision Message Switch for internal LIS interface, equip slots 8F and 31F with NT9X73BA (Rate Adapter CP) and 8R and 31R with NT9X79BA, F-Bus Extender Paddle Board.

		ENET	JNET	JNET
	MS SLOTS	MS P-side ports < than 256	1 - 4 Network Modules	5 - 7 Net. Mod. OR 10NMs for MSL appl.
2 IMLs 2 IOCs & 0 LPP & 1 FLIS	10 & 29 11 & 28 12 & 27 13 & 26 14 & 25 15 & 24	17AD/23AA 17AD/62BA *17DA/62CA 17DA/62CA	17AD/23AA 17AD/23AA 17AD/23AA 17AD/62BA	17AD/23AA 17BB/69BA 17BB/69BA 17AD/62BA
2 IMLs up to 8 IOcs & 0 LPPs	10 & 29 11 & 28 12 & 27 13 & 26 14 & 25 15 & 24	17BB/69BA *17DA/62CA 17DA/62CA	17BB/69BA 17AD/23AA 17AD/23AA	17BB/69BA 17BB/69BA 17BB/69BA
2 IMLs up to 8 IOcs & 3 LPPs	10 & 29 11 & 28 12 & 27 13 & 26 14 & 25 15 & 24	17BB/69BA 17BB/69BA *17DA/62CA 17DA/62CA	17BB/69BA 17BB/69BA 17BB/69BA	17BB/69BA 17BB/69BA 17BB/69BA

Note that the SuperNode SE can support either ENET or JNET configurations. It cannot support mixed ENET and JNET configurations, because JNET cannot interwork with ENET. Note that JNET is NOT supported with SNSE in streamline application.

* See the next table.

- 2) Use the following table to provide the circuit packs necessary for the required maximum number of MS and ENET ports.

The ENET interface provisioning is determined by the number of peripheral message channels required per ENET plane and is shown below.

P-side ports/ MS Plane	P-Side Peripheral Msg channels per ENET Pl.	slot 15 & 24		slot 14 & 25	
		Front Front	Rear Rear	Front Front	Rear Rear
32	< or = 15	17BB	62CA	-	-
64	< or = 31	17BB 17DA	62CA 62CA	17BB -	62CA/25BA -
96	< or = 47	17DA	62CA	17BB	62CA/25BA
128	< or = 63	17DA 17CA	62CA 62CA	17DA -	62CA/25BA -
256	< or = 127	17CA	62CA	17CA	62CA/25BA

The circuit pack fill order is:

- 1) 15F/R (MS 0) and 24F/R (MS 1),
- 2) 14F/R (MS 0) and 25F/R (MS 1).

The NT9X17CA is a 128 port card that has attained General Availability (GA) in BCS36.

The NT9X25BA MS Port Expander with Terminations paddleboard can only be used for Message Port growth on SNSE extensions. All initial jobs must use the NT9X62CA paddleboard.

3) SR512 Ports

Slots 13 and 26 are always available for additional functionality (That is AP/FP/SSLPP).

To add FLIS provide, two (2) NT9X17AD and two (2) NT9X62BA.
To add AP/FP provide, two (2) NT9X17DA and two (2) NT9X62BA.

- RUL4 1) Provision NT9X19AA Filler Face Plates and NT9X19BA Paddleboard Filler Face Plates for all unoccupied slots.

- RUL5 1) Provide one (1) NTZZ34EC DMS SNSE LIS Common CP in shelf position 26 if LIUs are to be provisioned for -60V applications.

If LIUs are equipped on the LIS and ENI shelves, provide:
two (2) NT9X79AA F-Bus Extender Paddleboards and,
two (2) NT9X79AA Des. Labels (P0689621).
These items extend the F-Bus on to the ENI shelf.

If LIUs are equipped on the LIS shelf only, provide:
two (2) NT9X79BA F-Bus Extender with BUS Termination PBs
two (2) NT9X79BA Des. Labels (P0689622).
The NT9X79BA terminate the F-Bus on the LIS shelf.

Provision one (1) NTEX5025 Cover Plate for each unused cable position on the NT9X6534 Bulkhead Assemblies. There are a total of 32 cable connector positions on the bulkheads, 16 on each side.

- 2) If ASU functionality is not required on the LIS shelf, provide one (1) NT9X01FB Filler Packfill, two (2) NT9X6534 LIS Bulkhead Assemblies, and thirty-two (32) NTEX5025 Cover Plates.

Bulkheads MUST ALWAYS be ordered on the LIS shelf, even if fillers are the only packs shipped with the SuperNode SE cabinet.

The NT9X01FB filler packfill contains:

- four (4) NT9X19CA Power Filler Face Plates,
 - two (2) NT9X0314 FSP Shorting Plugs (B0225296),
 - twenty-six (26) NT9X19AA Filler Face Plates and
 - twenty-six (26) NT9X19BA Paddleboard Filler Face Plates,
- 3) Provide two (2) NT9X30AB Global Power Converters, two (2) STP Power Filler CP and two (2) Designation labels (P0738496) for standard applications, or one (1) Redundant Power Converter (NTZZ34PB) when dual redundancy for the powering of the LIS shelf is required by the Customer.

- RUL6 1) A total of up to twelve (12) LIUs may be provisioned on the LIS. Provision any combination of:
NTZZ30AM CCS7 8 Meg LIU (E-DS0A)
NTZZ30BM CCS7 8 Meg LIU (E/HC-DS0A)
NTZZ30CM CCS7 8 Meg LIU (V.35)
NTZZ30TB CCS7 8 Meg LIU (E/HC-DS0A/LFS)
NTZZ30EC Ethernet Interface Unit

- 2) Provide NT9X19AA Front Filler circuit packs and NT9X19BA Rear Filler paddleboards for all unequipped slots in the LIS shelf.
- 3) Provide one NTZZ30EC for each Ethernet interface required.

- RUL7 1) If ENET or LIU functionality is not required in the ENI shelf, and the cabinet is to be shipped with an empty ENI Shelf Assembly, provide one (1) NT9X01FB Filler Packfill, two (2) ENI bulkheads, and two (2) NT9X6553 CM/SLM bulkheads.

The NT9X01FB filler packfill contains:

- four (4) NT9X19CA Power Filler Face Plates,
- two (2) NT9X0314 FSP Shorting Plugs (B0225296),
- twenty-six (26) NT9X19AA Filler Face Plates and
- twenty-six (26) NT9X19BA Paddleboard Filler Face Plates,

Bulkheads MUST ALWAYS be provided on the ENI shelf, even if fillers are the only packs shipped in the ENI shelf.

Bulkheads MUST ALWAYS be provided on the CM/SLM shelf.

- 2) The ENI and CM/SLM bulkheads are provisioned as follows:

BULKHEAD PROVISIONING

The ENI bulkheads have different connectors for non-Cabinetized, Meridian as well as Streamline applications. The bulkhead NT9X6553 is the common CM/SLM bulkhead for Standard, Meridian and Streamline applications.

The NT9X6520/21 pair always requires the NT9X6553 CM/SLM bulkhead for 1 to 48 DS30 links. The NT9X6520/21 pair always requires the NT9X6552 CM/SLM bulkhead for 49 to 96 DS30 links.

Choose one of the bulkhead options listed below:

For standard applications without an SLC, with up to 48 DS30 links provision:

- one (1) NT9X6520 ENI Bulkhead Assembly (left),
- one (1) NT9X6521 ENI Bulkhead Assembly (right) and
- two (2) NT9X6553 CM/SLM Bulkhead Assemblies.

The NT9X6553 CM/SLM bulkheads have no DS30 connection capability.

For standard applications without an SLC, with more than 48 DS30 links, but less than or equal to 96 DS30 links provision:

- one (1) NT9X6520 ENI Bulkhead Assembly (left),
- one (1) NT9X6521 ENI Bulkhead Assembly (right) and
- two (2) NT9X6552 CM/SLM Bulkhead Assemblies

The NT9X6552 CM/SLM bulkheads have extra DS-30 connection capacity.

For standard applications with an SLC, and with more than 48 DS30 links, but less than or equal to 112 DS30 links provision:

one (1) NT9X6530 ENI Bulkhead Assembly (left),
one (1) NT9X6531 ENI Bulkhead Assembly (right) and
two (2) NT9X6553 CM/SLM Bulkhead Assemblies.

The CM bulkhead is required when the DS-30 channel capacity exceeds 48 DS-30s per ENET plane, without an SLC. Forty-eight DS-30s is the maximum connection capacity of a single NT9X6520/21 ENI bulkhead.

- 3) For Meridian applications, provision:
 - two (2) NT9X0813 Bulkhead Assemblies and
 - two (2) NT9X6553 CM/SLM Bulkhead Assemblies.
- 4) For Streamline applications, provision:
 - two (2) NT9X8909 Streamline Bulkhead Assemblies and
 - two (2) NT9X6553 CM/SLM Bulkhead Assemblies.

Note that, when using NT9X8909 ENI Bulkhead with Cabinetized TME without an SLC, only up to a maximum of 14 8-DS30 cables can be used.

- RUL8
- 1) If LIU functionality is required on the ENI shelf, and ENET has been provided, provision one (1) NTZZ34GB DMS SNSE ENI F-Bus Common CP.
 - 2) Due to an incompatibility problem, NONE of the following BB may be ordered at this time. This problem applies only to the ENI shelf, these same BB may be used on the LIS shelf:
 - NTZZ30AM CCS7 8 Meg LIU (E-DS0A),
 - NTZZ30BM CCS7 8 Meg LIU (E/HC-DS0A),
 - NTZZ30CM CCS7 8 Meg LIU (V.35)
 - NTZZ30TB CCS7 8 Meg LIU (E/HC-DS0A/LFS)
 - NTZZ30EC Ethernet Interface Unitas required.

Note:

A total of up to two (2) LIUs may be provisioned on the ENI shelf.

The ENI shelf cannot support LIUs without the provisioning of an ENET. The reason for this restriction is that the ENET processor circuit packs control the power lock-out for the ENI shelf. If there are no ENET processor packs, there is no power supplied to the ENI shelf.

RUL9 1) The minimum allowable ENET configuration is 4K, with 2K of the initial 4K channels assigned for messaging between the MS and the ENET. The ENET on SuperNode SE is only available in 4K, 8K, 12K and 16K configurations.

- 2) For a 4K ENET, provision one (1) NTZZ34FA DMS SNSE 4K ENET, one (1) NTZZ34KA DMS SNSE ENI Common CP and see item 6) below for cable provisioning requirements.

Provide front fillers (NT9X19AA) and paddleboard fillers (NT9X19BA) for all unprovisioned slots. All slots must be filled to ensure proper air flow for cooling.

- 3) For an 8K ENET, provision one (1) NTZZ34FA DMS SNSE 4K ENET, one (1) NTZZ34KA DMS SNSE ENI Common CP and four (4) NT9X35FA 8K Crosspoint Circuit Packs in slots 14F, 15F for Plane 0, and 24F and 25F for Plane 1.

Also provision any combination of NT9X40BB 4-Port DS512 Fiber Interface Paddleboards, NT9X41BA 16-Port DS30 Paddleboards and NT9X45BA 3-Port DS512 + 16-Port DS30 Paddleboards in slots 14R, 15R, 24R and 25R, provided that slots 14R and 24R have matching paddleboards and slots 15R and 25R also have matching paddleboards.

Also, see 6) below for cable provisioning requirements. Provide front fillers (NT9X19AA) and paddleboard fillers (NT9X19BA) for all unprovisioned slots. All slots must be filled to ensure proper air flow for cooling.

- 4) For a 12K ENET, provision one (1) NTZZ34FA DMS SNSE 4K ENET, one (1) NTZZ34KA DMS SNSE ENI Common CP, and eight (8) NT9X35FA 8K Crosspoint Circuit Packs in slots 14F to 17F for Plane 0 and 24F to 27F for Plane 1.

Also provision any combination of NT9X40BB 4 Port DS512 Fiber Interface Paddleboards, NT9X41BA 16-Port DS30 Paddleboards and NT9X45BA 3-Port DS512 16-Port DS30 Paddleboards in slots 14R to 17R and 24R to 27R, providing that matching paddleboards are used in each of the following pairs of slots:
14R and 24R; 15R and 25R;
16R and 26R; 17R and 27R.

The total number of NT9X41BA and NT9X45BA Paddleboards may not exceed four (4) per ENET plane for Meridian applications.

Also, see 6) below for cable provisioning requirements.

Provide front fillers (NT9X19AA) and paddleboard fillers (NT9X19BA) for all unprovisioned slots. All slots must be filled to ensure proper air flow for cooling.

- 5) For a 16K ENET, provision one (1) NTZZ34FA DMS SNSE 4K ENET, one (1) NTZZ34KA DMS SNSE ENI Common CP and twelve (12) NT9X35FA 8K Crosspoint Circuit Packs in slots 14F to 19F and 24F to 29F.

Also provision any combination of NT9X40BB 4-Port DS512 Fiber Interface Paddleboards, NT9X41BA 16-Port DS30 Paddleboards and NT9X45BA 3-Port DS512 16-Port DS30 Paddleboards in slots 14R to 19R and 24R to 29R, provided that matching paddleboards are used in each of the following pair of slots:

14R and 24R; 15R and 25R;
16R and 26R; 17R and 27R;
18R and 28R; 19R and 29R.

The total number of DS30 ports provided by the NT9X41BA and NT9X45BA Paddleboards may not exceed ninety-six (96) per ENET plane due to the limit of bulkhead cable connectors available to terminate DS30 links.

The total number of NT9X41BA and NT9X45BA Paddleboards may not exceed four (4) per ENET plane for Meridian applications.

The paddleboards in slots 19R and 29R can not be used for DS30 links if NT9X6520 and 6521 bulkheads are provisioned.

Also, see 6) below for cable provisioning requirements. Provide front fillers (NT9X19AA) and paddleboard fillers (NT9X19BA) for all unprovisioned slots. All slots must be filled to ensure proper air flow for cooling.

- 6) For Standard applications, provision:

one (1) NT9X0520 Cable Assembly per NT9X41BA and
one (1) NT9X0524 Cable Assembly per NT9X45BA
(if the NT9X41BA or NT9X45BA is in slot 17R or 18R and requires DS30 connections to the CM bulkhead in position 00, use NT9X0540 instead of NT9X0520 and NT9X0542 instead of NT9X0524).

for Meridian applications, provision:

one (1) NT9X0815 Cable Assembly per NT9X41BA and
one (1) NT9X0817 Cable Assembly per NT9X45BA.
for up to 64 DS-30s.

For Streamline applications, provision:

one (1) NT9X0546 Cable Assembly per NT9X41BA and

one (1) NT9X0547 Cable Assembly per NT9X45BA
(when an SLC is provided, use NT9X0544 instead of NT9X0546
and use NT9X0545 instead of NT9X0547).
Both of the above cabling scenarios for Streamline allow
the termination of up to 112 DS-30 links.

Note:

The NT9X40BB only has fiber ports and fiber cables do not
terminate on the bulkhead. The cables from this paddleboard
go through a hole in the bulkhead and connect directly to
the fiberized peripheral.

7) BULKHEAD PROVISIONING

The ENI bulkheads have different connectors for Standard,
Meridian as well as Streamline applications. The bulkhead
NT9X6553 is the common CM/SLM bulkhead for Standard,
Meridian and Streamline applications.

The NT9X6520/21 pair always requires the NT9X6553 CM/SLM
bulkhead for 1 to 48 DS30 links. The NT9X6520/21 pair al-
ways requires the NT9X6552 CM/SLM bulkhead for 49 to 96
DS30 links.

The ENI and CM/SLM bulkheads are provisioned as follows:
Choose one of the bulkhead options listed below:

For standard applications without an SLC, with up to 48
DS30 links provision:

one (1) NT9X6520 ENI Bulkhead Assembly (left),
one (1) NT9X6521 ENI Bulkhead Assembly (right) and
two (2) NT9X6553 CM/SLM Bulkhead Assemblies.

The NT9X6553 CM/SLM bulkheads have no DS30 connection capa-
bility.

For standard applications without an SLC, with more than 48
DS30 links, but less than or equal to 96 DS30 links pro-
vision:

one (1) NT9X6520 ENI Bulkhead Assembly (left),
one (1) NT9X6521 ENI Bulkhead Assembly (right) and
two (2) NT9X6552 CM/SLM Bulkhead Assemblies

The NT9X6552 CM/SLM bulkheads have extra DS-30 connection
capacity.

For standard applications with an SLC, and with more than
48 DS30 links, but less than or equal to 112 DS30 links
provision:

one (1) NT9X6530 ENI Bulkhead Assembly (left),
one (1) NT9X6531 ENI Bulkhead Assembly (right) and

two (2) NT9X6553 CM/SLM Bulkhead Assemblies.

The CM bulkhead is required when the DS-30 channel capacity exceeds 48 DS-30s per ENET plane, without an SLC. Forty-eight DS-30s is the maximum connection capacity of a single NT9X6520/21 ENI bulkhead.

- RUL10 1) For new jobs at BCS35 and higher, provide the NT9X13MB processor circuit boards. The NT9X13MB Processor provides ability to function with either NT9X14EA (96 Meg memory) or NT9X14DB (24 Meg memory), but not both. That is NT9X14DB and NT9X14EA WILL NOT be supported in a mixed configuration. Check availability prior to ordering NT9X14EA. The RTIF PB NT9X26AB will have to be provisioned with NT9X13MB processor.
- 2) The SE 70 BRISC processor may be ordered if a higher capacity processor is required. Also NA004 is required as base software. The RTIF required for the SE 70 is the NT9X26EA. If a SE 70 processor is required, and the office is at CSP04 or higher, SLM III is required. The SE 70 contains 256 MBytes of memory onboard, no memory cards are required if the combined PS/DS is less than 224 MBytes. SE 70 is available only with NPI approval.
- 3) The 96 Meg memory cards are the recommended option on SNSE initials from BCS35 onwards. The 24 Meg memory will only be available on SNSE extensions.
- 4) The NT9X14EA memory boards have the capability to function in burst mode. Burst mode memory is required to fully utilize the Series 60 BRISC processor (BRISC not available until BCS36). The new RTIF NT9X26DB will have to be provisioned with this BRISC processor.
- 5) The NT9X14DB 24Mb circuit boards are to be provided for memory extensions of existing offices at BCS34. Note that 24Mb circuit boards do not function in burst mode.
- 6) Provision memory circuit packs in pairs, in slots in the following order:
- 1) 16F and 23F;
 - 2) 15F and 24F;
 - 3) 14F and 25F;
 - 4) 13F and 26F;
 - 5) 12F and 27F.

The number of pairs to be provisioned depends on the memory requirement for the office.

Processor	SE 20 NT9X13MA	SE 20 NT9X13MB	SE 60 NT9X10AA	SE 70 NT9X10BA
RTIF PB	NT9X26AB	NT9X26AB	NT9X26DB	NT9X26EA
Dual Port Msg	NT9X86AA	NT9X86AA	NT9X86AB	NT9X86AB
Memory	24 Meg. NT9X14DB	NT9X14DB OR NT9X14EA	96 Meg. NT9X14EA	96 Meg NT9X14EA
Port Card	NT9X12AC/ NT9X12AD	NT9X12AC/ NT9X12AD	NT9X12AD	NT9X12AD
Software Release	BCS 34	BCS 35	BCS 36	CSP004

SNSE BRISC 60 and 70 Upgrades

Refer to the table above for BRISC upgrade requirements.

RUL11 Deleted

RUL12 1) Provide designation labels as required.

RUL13 1) Provide mechanical hardware for the S/DMS cabinet, such as end guards, frame isolating pads and anchors by using the Engineering Manual inserts:

NT9X95BA - Mechanical Hardware for S/DMS Cabinet,
NTRX73 - Cabinetized DMS Cosmetic Endguards
and EMI Sidepanels.

2) Provision two (2) NTRX07AB End Panel Assy Kits (Grey) for grey cabinets.

OR

3) Provision two (2) NTRX07AE End Panel Assy Kits (Brown) for brown cabinets.

4) Provide one (1) NT9X03BA, Frame Supervisory Panel, per Cabinet for -60V powered installations.

- 5) Provide one (1) NT9X95GU, Cooling Unit, per cabinet for -60V powered installations. This unit comes with 3 replaceable blower assemblies(A0382103), and a replaceable electronics module(A0383326) installed. However, customers may desire spares. The Cooling Unit mounts immediately below position 00.

- RUL14 1) Provide one (1) NT9X9532 stand-alone Cabling Interface Kit when powering the NT9X01MB cabinet from the 7 foot PDC frame OR powering from the new CPDC (NTRX31CA) cabinet, OR powering from the NTRX31AA or from the NTRX31BA CPDC cabinet which is in the different lineup than the NT9X01MB. This kit includes cables, filters, and miscellaneous mounting hardware.

Customers may require a spare EMI line filter (A0326932) per office, this filter is part of the stand-alone interface kit.

Twenty-two (22) white boots are included in the NT9X9532 stand-alone Cabling Interface Kit.

Note: The twenty-two white boots MUST NOT be installed on the manufacturing shop floor. The boots must be shipped separately (loose) and installed at the job site.

- 2) Provide one (1) NT9X9531 Horizontal Power Cabling Interface Kit when powering the NT9X01MB cabinet from the NTRX31AA or from the NTRX31BA CPDC cabinet which is in the same lineup as the NT9X01MB. This kit includes power cables, terminal blocks, and miscellaneous mounting hardware.

Always provide:

two (2) EMI contact strips (P0714698)
when providing the NT9X9531 Horizontal Power Cabling Interface Kit.

- RUL15 1) Provide two (2) NT9X86AA Dual Port Message Controllers when the CM Processor (NT9X13MA or NT9X13MB) is provided.
- 2) Provide two (2) NT9X86AB Dual Port Message Controllers when a BRISC processor (NT9X10AA/BA) is provided.
- RUL16 1) Provide one (1) P0736059 power filter label per SNSE cabinet when powering the SNSE cabinet in a non-Streamline lineup or in a Stand alone application.

DMS SUPERNODE SE
4K ENET

PEC CODE: NTZZ34FA

CPC CODE:

| RATING: MD

REPLACES: NTZZ34FB

REPLACED BY: Not Applicable

ABBREVIATION NAME:

ENGINEERING DESCRIPTION: The DMS SuperNode SE 4K ENET provides the minimum components necessary for a functional 4K ENET shelf.

REFERENCE DOCUMENTATION: SLZZ34FA 00 06
NTZZ34FA REL 06

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA
Carrier
Wireless

| ISSUE AUTHOR: NTI: Jerry Palmer Dept. 3471 (PPK)

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NTZZ34FA EMC4-06-018 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 04 28	ECM 632 01	First issue of insert
92 09 29	ECM 632 02	Add Streamline information
92 11 02	ECM 632 03	Move NT9X7210,11,12,13 cables to NTZZ34CA insert.
93 01 15	ECM 632 04	Add additional Bulkhead information.
96 03 28	ECM 632 18	NT9X40BA is A&M and rep. by NT9X40BB MD Section per BB Rationalization.

The DMS SuperNode SE 4K ENET is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
ENET Processor CP	NT9X13FA		2	13	10F, 20F	AP
Clock and Message CP	NT9X36BA		2	13	11F, 21F	AP
8K Crosspoint CP	NT9X35FA		4	13	12F, 13F, 22F, 23F	AP
Filler Paddleboard	NT9X19BA		2	13	12R, 22R	AP
RTIF PB	NT9X26AB		2	13	10R, 20R	AP
4-Port DS512 Fiber I/F PB	NT9X40BB		2	13	11R, 21R	AP
3-Port DS512 16-Port DS30 PB	NT9X45BA		2	13	13R, 23R	AP
Cable Assembly	A0352269		8	13		AP
Design Label (NT9X13FA)	P0697525		2	13	10F, 20F	AP
Design Labels (NT9X36BA)	P0704531		2	13	11F, 21F	AP
Design Labels (NT9X35FA)	P0735098		4	13	12F, 13F, 22F, 23F	AP
Design Label (NT9X26AB)	P0705003		2	13	10R, 20R	AP
Design Label (NT9X19BA)	P0709516		2	13	12R, 22R	AP
Design Label (NT9X40BB)	P0734155		2	13	11R, 21R	AP
Design Label (NT9X45BA)	P0731527		2	13	13R, 23R	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

AP 1) When PEC NTZZ34FA is ordered, these items are provided.

SUPERNODE SE ENI COMMON CP
DMS SUPERNODE SE

PEC CODE: NTZZ34BB

CPC CODE:

| RATING: MD

REPLACES: NTZZ34BA

REPLACED BY: Not Applicable

ABBREVIATION NAME:

ENGINEERING DESCRIPTION: Provides the components required to support
the ENET shelf.

REFERENCE DOCUMENTATION: SLZZ34BB 00 01

MARKETS: Applicable markets:

Canada
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: NTI: Jerry Palmer Dept. 3471 (PPK)

MAIN CONTACT: NTI: Jerry Palmer Dept. 3471 (PPK)

NTZZ34BB EMC4-06-019 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 92 11 02	----- ECM 632 03	Previous history not available Remove shelf design labels as they are now provided in the frame BB.
94 09 26	ECM 632 11	Introduce Global Power converters.
96 03 28	ECM 632 18	MD section per BB Rationalization.

The SuperNode SE ENI Common CP DMS SuperNode SE is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
-5V Global Power Converter	NT9X31AB		2	13	01F, 33F	AP
+5V Global Power Converter	NT9X30AB		2	13	04F, 36F	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT9X30AA	A&M	NT9X30AB
NT9X31AA	A&M	NT9X31AB

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

FLAGS:

RULES:

AP 1) When PEC NTZZ34BB is ordered, these items are provided.

APPLICATION PROCESSOR CABINET

PEC CODE: NT9X80BA

| CPC CODE: B0232072

| RATING: MD

| REPLACES: N/A

| REPLACED BY: No Replacement

ABBREVIATION NAME: APC

ENGINEERING DESCRIPTION: The Application Processor Cabinet (APC) houses Application Processor Shelves and Storage Device Shelves.

Each shelf is divided into two independent half-shelves. The Application Processor Shelf can house up to two Application Processor (AP) or File Processor (FP) units. The Storage Device Shelf can house up to two Storage Devices (SDs). Each SD consumes one half shelf and comprises a pair of mass storage units (disk or tape drives).

SCSI cables are used to interconnect an FP to one or more SDs in a daisy chain arrangement. Shelves and interconnect cabling are provisionable, subject to certain restrictions.

REFERENCE DOCUMENTATION: N/A

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA
Carrier

ISSUE AUTHOR: NTI: Bob Belvin DEPT. 3471 (PPK)

MAIN CONTACT: NTI: Rena Fisher Dept. 3471 (PPK)

NT9X80BA EMC4-08-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
92 10 26	ECM 512 05	Add Fiber Assembly Panels(Right and Left) and Warning Labels.
95 10 23	ECM 512 06	MD PECs NT9X80BA, NTZZ35BA, CA, DA, EA, FA, GA, HA per EC18-41001.

The Application Processor Cabinet is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
DMS-CORE Common Cabinet Power Terminal Block Kit	NT9X0101 NTEX5001		1			AP-XXX RUL11
Terminator FSP Plug	NT9X0314			52		RUL16
Application Processor Shelf	NT9X8101		1	39		AP
Application Processor Shelf	NT9X8101			XX		RUL1
Left Fiber Assembly Panel	NT9X6506			XX		RUL1
Right Fiber Assembly Panel	NT9X6503			XX		RUL1
APC Application Processor (LEFT)	NTZZ35BA			XX	1F	RUL2
APC File Processor (LEFT)	NTZZ35CA			XX	1F	RUL2
24Mb Memory CP	NT9X14DB			XX	8F-11F, 19F-16F	RUL3
Remote Term I/F PB	NT9X26AB			XX	13R, 14R	RUL4
APC Application Processor (RIGHT)	NTZZ35DA			XX	24F	RUL2
APC File Processor (RIGHT)	NTZZ35EA			XX	23F	RUL2
APC Pack Fill Right	NTZZ35JA			XX	20F	RUL14
24Mb Memory CP	NT9X14DB			XX	20F-23F, 31F-28F	RUL3
Remote Term I/F PB	NT9X26AB			XX	25R, 26R	RUL4
APC Storage Device Shelf	NT9X8301			YY		RUL5
Left Fiber Assembly Panel	NT9X6506			YY		RUL5
Right Fiber Assembly Panel	NT9X6503			YY		RUL5
APC Storage Device (LEFT)	NTZZ35FA			YY	1F	RUL12
APC Storage Device (FULL SHELF)	NTZZ35HA			YY	1F	RUL13
600 MB Disk Storage Unit	NT9X90AA			YY	8F, 14F	RUL6
1.3 GByte DAT Storage Unit	NT9X90BA			YY	8F, 14F	RUL6
Filler Face Plate	NT9X19AA			YY	8F-13F, 14F-19F	RUL6
APC Storage Device (RIGHT)	NTZZ35GA			YY	32F	RUL12
APC Pack Fill Right	NTZZ35JA			XX	20F	RUL14
Storage Device Pack Fill Right w PB	NTZZ35KA			YY	20F	RUL15
600 MB Disk Storage Unit	NT9X90AA			YY	20F, 26F	RUL6
1.3 GByte DAT Storage Unit	NT9X90BA			YY	20F, 26F	RUL6
Filler Face Plate	NT9X19AA			YY	20F-25F, 26F-31F	RUL6
Desig. Label(NT9X90AA)	P0729127			YY	8F, 14F	RUL6
Desig. Label(NT9X90BA)	P0729128			YY	8F, 14F	RUL6

Retired Equipment
Application Processor Cabinet

NT9X80BA
EMC4-08-000
Page 4

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Desig. Label(NT9X90AA & NT9X90BA)	P0730171			YY	8F, 14F	RUL6
Filler Packfill	NT9X01FB			ZZ		RUL7
Blank Shelf	NT0X24BD			ZZ		RUL7
End of Aisle Lamp Cable	NT9X0146					RUL8
End of Aisle Lamp Cable	NT9X0172					RUL8
Kick Plate Assy (Brown)	NT0X2430					RUL9
Kick Plate Assy (Gray)	NT0X2516					RUL9
Frame Fail Light(Brown)	NT0X24BT					RUL9
Frame Fail Light(Gray)	NT0X24CN					RUL9
Warning Label(English/French) 'High Voltage/Haute Tension'	P0689138					RUL17
Warning Label(English) 'High Voltage'	P0675712					RUL17
Warning Label(English/French) 'High Voltage/Haute Tension'	P0689137					RUL17
Warning Label(English) 'High Voltage'	P0675711					RUL17
SCSI Wiring Configuration	AR					RUL10

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase.
Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if
they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufac-
tured and cannot be ordered.

NOTES:

- 1) Both planes of each unit are shown together in the equipment list, while the two half-shelves are shown separately.
- 2) XX, YY, and ZZ denote shelf position 00, 13, 26, or 39. XX denotes equipment that can be assigned to an Application Processor Shelf. One Application Processor Shelf is Always Provided in position 39. YY denotes equipment that can be assigned to a Storage Device Shelf. ZZ denotes equipment that can be assigned to any shelf position.
- 3) Maximum four (4) FPs are to be assigned beginning from shelf 39 (top of cabinet) moving downwards, and left to right across each shelf. Allot space for SDs from shelf 00 (bottom of cabinet) moving upwards, and left to right across each shelf. Leave no gaps in the assignment sequence.
- 4) The SCSI bus with the greatest number of devices is to be assigned first, beginning at the bottom of the cabinet, followed by the next largest bus, and so on.
- 5) Provision the Storage Devices according to the permissible configurations outlined in the ECM. SCSI cabling cannot leave the cabinet.
- 6) Within each SD space allotment, Power Converters, SCSI Device Interface Paddleboards, and SCSI cables must be equipped initially. The Storage Devices themselves can be provisioned in a future extension. Any type of SD may be provisioned in an allotted quadrant, or a quadrant may be left unequipped. However, it is recommended to position the two members of a shadowed pair side by side within a half shelf.
- 7) It is permitted to leave shelf positions unequipped initially. In an extension, Application Processor and Storage Device Shelves can be added in the field in place of the initial Blank Shelf filler.
- 8) Disk storage devices are more sensitive to vibration than DAT storage devices. Where possible, disk drives should be located lower in the cabinet than DAT drives.
- 9) After the FPs and SDs are assigned per the above notes, APs may be assigned to AP shelves into the remaining half-shelf spaces. It is possible to fill a cabinet with APs alone, should an application require it.

RULES:

AP 1) When PEC NT9X80BA is ordered, these items are provided.

2) The NT9X0101 is comprised of the following:

- NT0X24AA Cabinet Framework
- NT9X03AA Frame Supervisory Panel
- A0323984 Core Cooling Unit
- Cabinet Common Cabling & FSP Cabling

The NT0X24AA framework provides earthquake and EMI protection. The framework is 72" high, 28" deep and 42" wide. The NT9X03AA FSP is mounted at position 52. The A0323984 Cooling Unit is located immediately below position 0.

AP-XXX 1) This PEC is always provided on the NT9X80BA and is indicated here for completeness.

- RUL1 1) Provide one (1) NT9X8101 Application Processor Shelf when this shelf position is to contain Application Processors (APs) or File Processors (FPs).
- 2) Provide one (1) NT9X6506 Left Fiber Assembly Panel and one (1) NT9X6503 Right Fiber Assembly Panel for every NT9X8101 Application Processor Shelf provisioned. Shelf 39 already comes equipped with one (1) NT9X6506 and one (1) NT9X6503.

- RUL2 1) Provision the circuit pack quantities indicated to equip one half-shelf to provide a dual-plane AP or FP:

PEC	Quantity per half-shelf
-----	-----
NTDX15AA	2
NT9X86AA	2
NT9X13LA	2
NT9X21AB	2
NT9X62AA	2

- RUL3 1) Provision NT9X14DB 24 MByte Memory CP as required by the application. The application may designate one of the memory CPs as a hot spare; this is optional. Note that with the NT9X14DB, the first 4 MByte of data store is unusable.
- 2) In an Application Processor, a maximum of four (4) 24 MByte Memory CP may be equipped per plane (total eight (8) per AP) for a total of 92 MBytes of memory per plane. (96 - 4 = 92 MBytes) In a File Processor, a maximum of three (3) 24 MByte Memory CP may be equipped per plane (total six (6) per FP) for a total of 68 MBytes of memory per plane. (72 - 4 = 68 MBytes) In a FP, slots 8F-10F and 19F-17F, or 20F-22F and 31F-29F, are available for memory CP.
- 3) Assign memory CP beginning with the CP position farthest from the CPU CP and working towards the CPU. For the left half-shelf the sequence is 8F and 19F, 9F and 18F, 10F and 17F, (and 11F and 16F if the unit is an AP). For the right half shelf the sequence is 20F and 31F, 21F and 30F, 22F and 29F, (and 23F and 28F if the unit is an AP).
- RUL4 1) Provision NT9X26AB if that vintage is equipped in the DMS-Core. New core installations should be provisioned with NT9X26AB.
- RUL5 1) Provide one (1) NT9X8301 Storage Device Shelf when this shelf position is to contain Storage Devices (SDs).

- 2) Provide one (1) NT9X6506 Left Fiber Assembly Panel and one (1) NT9X6503 Right Fiber Assembly Panel for every NT9X8301 Storage Device Shelf provisioned.
- RUL6 1) Provide one (1) NT9X90AA 600 MByte Disk Storage Device per quadrant when the application requires a hard disk drive.
- 2) Provide one (1) NT9X90BA 1.3 GByte DAT Storage Device per quadrant when the application requires a Digital Audio Tape storage device. Provision DG60M Magnetic Tape Data Cartridge (blank) as required.
- 3) Provide six (6) NT9X19AA Filler Face Plates for each allocated quadrant not equipped with an SD.
- 4) When equipping one half SD(storage device) shelf with a combination of one Disk(NT9X90AA) and one DATs(NT9X90BA) then provide one (1) P0730171 Label.
- 5) When equipping one half SD(storage device) shelf with one or two Disk(NT9X90AA) then provide one (1) P0729127 Label.
- 6) When equipping one half SD(storage device) shelf with one or two DATs(NT9X90BA) then provide one (1) P0729128 Label.
- RUL7 1) When a provided shelf is not equipped with APs, FP's or SDs, provide one (1) NT9X01FB Filler Packfill to satisfy the forced air cooling requirements of the frame. (Designation Labels P0687764 and P0687765 ARE INCLUDED with the NT9X01FB Filler Packfill)
- 2) When a shelf is not equipped, provide one (1) NT0X24BD Blank Shelf to satisfy the forced air cooling requirements of the frame.
- RUL8 1) Provide one (1) End of Aisle Lamp cable assembly (NT9X0146) if this is the last cabinet in the line-up.
- 2) Provide one (1) End of Aisle Lamp cable assembly (NT9X0172) if the spares cabinet (NT9X01FA) is located between the NT9X80BA and the end of the line-up.
- RUL9 1) Provision one (1) NT0X2430 Kick Plate Assembly and one (1) NT0X24BT Frame Fail Light when the exterior cabinet mechanical hardware is brown-coloured. Provision one (1) NT0X2516 Kick Plate Assembly and one (1) NT0X24CN Frame Fail Light when the exterior cabinet mechanical hardware is grey-coloured. Refer to the Engineering Manual Section

EMA4-04-000 for doors, trim, and other provisionable mechanical hardware for the cabinet.

- RUL10 1) SCSI cables are provided based on the physical length from the FP to the SD, and between SDs in the chain. Each diagram in the table below depicts a cabinet configuration, with shelves 39, 26, 13 and 00 shown from top to bottom. "FP" represents a File Processor, "SD" a space allotted for a Storage Device, and "-" a blank space or Application Processor. The digit following FP or SD indicates which SCSI bus the device belongs to (eg. SD0 is a space allocated to a Storage Device on SCSI bus 0. It is connected to all other SD0 devices and FP0.)

Select the configuration with the desired quantity of FPs and SD spaces, and provision the quantity of cable PECs indicated.

Table 1 - SCSI Cable Provisioning

QTY OF FPs	CABINET CONFIGURATION	CABLE LENGTH (INCHES)	QTY	PEC
-----	-----	-----	---	-----
1	FP0 -	55	3	NT9X0443
		60	4	NT9X0444
		65	3	NT9X0445
	SD0 SD0	70	5	NT9X0446
	SD0 SD0	75	1	NT9X0447
1	SD0 SD0			
	SD0 SD0			
		55	1	NT9X0443
	FP0 -	60	1	NT9X0444
		65	2	NT9X0445
1	- -	70	3	NT9X0446
		75	4	NT9X0447
	SD0 SD0	80	1	NT9X0448
	SD0 SD0			

Table 1 - SCSI Cable Provisioning (continued)

QTY OF FPs	CABINET CONFIGURATION	CABLE LENGTH (INCHES)	QTY	PEC								
1	<table><tr><td>FP0</td><td>-</td></tr><tr><td>-</td><td>-</td></tr><tr><td>-</td><td>-</td></tr><tr><td>SD0</td><td>SD0</td></tr></table>	FP0	-	-	-	-	-	SD0	SD0	65	1	NT9X0445
		FP0	-									
		-	-									
		-	-									
		SD0	SD0									
		70	2	NT9X0446								
75	1	NT9X0447										
80	1	NT9X0448										
85	3	NT9X0449										
1	<table><tr><td>FP0</td><td>-</td></tr><tr><td>-</td><td>-</td></tr><tr><td>SD0</td><td>-</td></tr><tr><td>SD0</td><td>SD0</td></tr></table>	FP0	-	-	-	SD0	-	SD0	SD0	55	3	NT9X0443
		FP0	-									
		-	-									
		SD0	-									
		SD0	SD0									
		60	2	NT9X0444								
65	4	NT9X0445										
70	2	NT9X0446										
75	2	NT9X0447										
1	<table><tr><td>FP0</td><td>-</td></tr><tr><td>-</td><td>-</td></tr><tr><td>-</td><td>-</td></tr><tr><td>SD0</td><td>-</td></tr></table>	FP0	-	-	-	-	-	SD0	-	60	1	NT9X0444
		FP0	-									
		-	-									
		-	-									
		SD0	-									
		65	3	NT9X0445								
70	2	NT9X0446										
75	1	NT9X0447										
80	1	NT9X0448										
2	<table><tr><td>FP0</td><td>-</td></tr><tr><td>FP1</td><td>-</td></tr><tr><td>-</td><td>-</td></tr><tr><td>SD0</td><td>SD1</td></tr></table>	FP0	-	FP1	-	-	-	SD0	SD1	60	1	NT9X0444
		FP0	-									
		FP1	-									
		-	-									
		SD0	SD1									
		65	3	NT9X0445								
70	5	NT9X0446										
75	5	NT9X0447										
80	2	NT9X0448										
	<table><tr><td>FP0</td><td>-</td></tr></table>	FP0	-	35	1	NT9X0416						
		FP0	-									
		40	3	NT9X0419								
45	2	NT9X0420										

2	FP1 -	50	1	NT9X0442
		55	1	NT9X0443
	SD1 -	65	1	NT9X0445
		70	2	NT9X0446
	SD0 SD0	75	1	NT9X0447
		80	1	NT9X0448
		85	3	NT9X0449
2		35	1	NT9X0416
	FP0 -	40	1	NT9X0419
		45	2	NT9X0420
	FP1 -	50	1	NT9X0442
		55	1	NT9X0443
	SD1 SD1	60	2	NT9X0444
		65	2	NT9X0445
	SD0 SD0	70	2	NT9X0446
		75	1	NT9X0447
		80	1	NT9X0448
		85	3	NT9X0449
2		45	1	NT9X0420
	FP0 FP1	50	3	NT9X0442
		55	4	NT9X0443
	SD1 SD1	60	2	NT9X0444
		65	2	NT9X0445
	SD0 SD0	70	3	NT9X0446
		75	4	NT9X0447
	SD0 SD0	80	1	NT9X0448
2		45	1	NT9X0420
	FP0 FP1	50	3	NT9X0442
		55	3	NT9X0443
	SD1 -	60	2	NT9X0444
		65	3	NT9X0445
	SD0 SD0	70	3	NT9X0446
		75	4	NT9X0447
	SD0 SD0	80	1	NT9X0448

Table 1 - SCSI Cable Provisioning (continued)

QTY OF FPs	CABINET CONFIGURATION	CABLE LENGTH (INCHES)	QTY	PEC								
2	<table><tr><td>FP0</td><td>FP1</td></tr><tr><td>-</td><td>-</td></tr><tr><td>SD1</td><td>SD1</td></tr><tr><td>SD0</td><td>SD0</td></tr></table>	FP0	FP1	-	-	SD1	SD1	SD0	SD0	55	1	NT9X0443
		FP0	FP1									
		-	-									
		SD1	SD1									
		SD0	SD0									
		60	1	NT9X0444								
		65	5	NT9X0445								
70	3	NT9X0446										
75	2	NT9X0447										
80	1	NT9X0448										
85	3	NT9X0449										
2	<table><tr><td>FP0</td><td>FP1</td></tr><tr><td>-</td><td>-</td></tr><tr><td>SD1</td><td>-</td></tr><tr><td>SD0</td><td>SD0</td></tr></table>	FP0	FP1	-	-	SD1	-	SD0	SD0	60	1	NT9X0444
		FP0	FP1									
		-	-									
		SD1	-									
		SD0	SD0									
		65	4	NT9X0445								
		70	5	NT9X0446								
75	2	NT9X0447										
80	1	NT9X0448										
85	3	NT9X0449										
2	<table><tr><td>FP0</td><td>FP1</td></tr><tr><td>-</td><td>-</td></tr><tr><td>-</td><td>-</td></tr><tr><td>SD0</td><td>SD1</td></tr></table>	FP0	FP1	-	-	-	-	SD0	SD1	60	1	NT9X0444
		FP0	FP1									
		-	-									
		-	-									
		SD0	SD1									
		65	4	NT9X0445								
		70	2	NT9X0446								
75	5	NT9X0447										
80	3	NT9X0448										
85	1	NT9X0449										
2	<table><tr><td>FP0</td><td>FP1</td></tr><tr><td>SD1</td><td>SD1</td></tr><tr><td>SD0</td><td>SD1</td></tr><tr><td>SD0</td><td>SD0</td></tr></table>	FP0	FP1	SD1	SD1	SD0	SD1	SD0	SD0	45	1	NT9X0420
		FP0	FP1									
		SD1	SD1									
		SD0	SD1									
		SD0	SD0									
		50	4	NT9X0442								
		55	5	NT9X0443								
60	6	NT9X0444										
65	5	NT9X0445										
70	2	NT9X0446										
75	1	NT9X0447										

3

FP0	FP1
FP2	-
SD1	SD2
SD0	SD0

50	1	NT9X0442
55	3	NT9X0443
60	4	NT9X0444
65	5	NT9X0445
70	5	NT9X0446
75	2	NT9X0447
80	1	NT9X0448
85	3	NT9X0449

Table 1 - SCSI Cable Provisioning (continued)

QTY OF FPs	CABINET CONFIGURATION	CABLE LENGTH (INCHES)	QTY	PEC
3	FP0 FP1	35	1	NT9X0416
		40	3	NT9X0419
	FP2 -	45	2	NT9X0420
		50	1	NT9X0442
	SD2 -	55	1	NT9X0443
		60	1	NT9X0444
	SD0 SD1	65	5	NT9X0445
		70	2	NT9X0446
		75	5	NT9X0447
		80	2	NT9X0448
4	FP0 FP1	85	1	NT9X0449
		35	1	NT9X0416
	FP2 FP3	40	4	NT9X0419
		45	5	NT9X0420
	SD2 SD3	50	4	NT9X0442
		55	1	NT9X0443
	SD0 SD1	60	2	NT9X0444
		65	4	NT9X0445
		70	2	NT9X0446
		75	5	NT9X0447
		80	3	NT9X0448
		85	1	NT9X0449

RUL11 1) Provide one NTEX5001 Power Terminal Block Kit when overhead power cable routing is used.

RUL12 1) Provision the circuit pack quantities indicated to equip one half-shelf to provide capacity for Storage Devices.

PEC	Quantity per half-shelf
NT9X91AA	2
NT9X19AA	1
NT9X19BA	9
NT9X89BA	4

RUL13 1) Provision the circuit pack quantities indicated to equip one full shelf to provide capacity for Storage Devices.

PEC	Quantity per full-shelf
NT9X91AA	4

NT9X19AA	2
NT9X19BA	18
NT9X89AA	8

- RUL14 1) Provision the circuit pack quantities indicated to equip one right half application processor shelf with Filler Packs.

PEC	Quantity per half-shelf
NT9X19CA	2
NT9X19AA	13
NT9X19BA	13
NT9X0314	1

- RUL15 1) Provision the circuit pack quantities indicated to equip the right half storage device shelf with Filler Packs. This MUST BE USED IN CONJUNCTION WITH the NTZZ35HA.

PEC	Quantity per half-shelf
NT9X19AA	12

- RUL16 1) Provision one (1) NT9X0314 Terminator FSP Plug at the FSP for every two (2) NT9X19CA equipped.

- RUL17 1) Provision one (1) P0675712 Warning Label per cabinet for applications requiring English language. 2) Provision one (1) P0689138 Warning Label per cabinet for applications requiring English and French language.

- 3) Provision one (1) P0675711 Warning Label per FSP for applications requiring English language.

- 4) Provision one (1) P0689137 Warning Label per FSP for applications requiring English and French language.

97/12/09

EMC5

INPUT/OUTPUT SUBSYSTEMS CHAPTER ALL

INPUT/OUTPUT SUBSYSTEMS CHAPTER ALL

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97/12/09

INPUT/OUTPUT SUBSYSTEMS CHAPTER ALL

EMC5-01-DDC-1	DISK DRIVE CONTROLLER	NTZZ09JA
EMC5-01-DDU-1	DUAL DISK DRIVE UNIT SHELF	NTZZ09BA
EMC5-01-DDU-1B	DUAL DISK DRIVE UNIT SHELF	NTZZ09BB
EMC5-01-DPP-1	DISTRIBUTED PROCESSING PERIPHERAL	NTZZ09LA
EMC5-01-DPP-3	DISTRIBUTED PROCESSING PERIPHERAL 380 MB	NTZZ09RA
EMC5-01-DPP-4	DISTRIBUTED PROCESSING PERIPHERAL 760 MB	NTZZ09SA
EMC5-01-DPP-5	DPP SHELF	NTZZ09XA
EMC5-01-DPP-6	DPP SHELF (COMPRESSION)	NTZZ09YA
EMC5-01-IOC-1	INPUT/OUTPUT CONTROLLER MODULE (NT40)	NTZZ09VA
EMC5-01-IOC-2	INPUT/OUTPUT CONTROLLER MODULE (NT-40)	NTZZ09VB
EMC5-01-IOC-3	INPUT/OUTPUT CONTROLLER MODULE	NTZZ09CA
EMC5-01-IOC-4	INPUT/OUTPUT CONTROLLER MODULE	NTZZ09CB
EMC5-01-IOE-1	EARTHQUAKE IOE FRAME	NTZZ09WA
EMC5-01-IOE-2	IOE FRAME US ONLY	NTZZ09TB
EMC5-01-IOE-3	CABINETIZED INPUT/OUTPUT EQUIPMENT MODEL	NTZZ47EB
EMC5-01-MPC-1	MULTI-PROTOCOL CONTROLLER	NTZZ09GA
EMC5-01-MPC-2	ENHANCED MULTI-PROTOCOL CONT CP	NTZZ09KA
EMC5-01-NET-5	ENET IN C42 (S/DMS) CABINET	NTZZ10LA
EMC5-01-ROS-1	STRATUM II SHELF	NTZZ09MA
EMC5-01-ROS-2	STRATUM 2.5 SHELF	NTZZ09NA
EMC5-01-ROS-3	HOT SPARE STRATUM 2.5 OSCILLATOR AND INT	NTZZ09QA
EMC5-01-ROS-4	HOT SPARE STRATUM II OSC. & I/F	NTZZ09PA
EMC5-01-TAP-1	9 TRACK TAPE CTRL CP COOK	NTZZ09HA
EMC5-01-TAP-2	MAGNETIC TAPE DRIVE ASSEMBLY (-48V) FOR	NTZZ32BM
EMC5-01-TAP-3	MAGNETIC TAPE DRIVE ASSEMBLY MODEL B CIO	NTZZ32LA
EMC5-01-TC-1	I/O TERMINAL CONTROLLER CP	NTZZ09DA
EMC5-01-001	INPUT/OUTPUT EQUIPMENT FRAME	NTZZ09TA
EMC5-02-DRS-1	RACK MOUNT LOW SPEED	NTZZ24BA
EMC5-02-000	MODEM EQUIPMENT FRAME	NTZZ24AA
EMC5-03-DDP-2	228 DISK DRIVE PACKAGE	NTZZ32GA
EMC5-03-DDU	DISK DRIVE UNIT SHELF PACKAGE	NTZZ32FA
EMC5-03-DDU-1	228MB DISK DRIVE	NTZZ09UA
EMC5-03-DPP-380	380 MBYTE DPP ASSEMBLY	NTZZ32CA
EMC5-03-DPP-760	760 MBYTE DPP ASSEMBLY	NTZZ32DA
EMC5-03-IOC	I/O CONTROLLER MODULE PACKAGE	NTZZ32EA
EMC5-03-ST1	CIOE STRATUM II REMOTE OSCILLATOR SHELF	NTZZ32HA
EMC5-03-ST2	STRATUM 2.5 RMT OSC. SHELF	NTZZ32JA
STRATUM	2.5 ROS (CIOE)	970
STRATUM	II ROS (CIOE)	970
STRATUM	ROS H/W PACKAGE (CIOE)	970
EMC5-03-001	CABINETIZED INPUT/OUTPUT EQUIPMENT	NTZZ32AA

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DISK DRIVE CONTROLLER

PEC CODE: NTZZ09JA

CPC CODE: B0231875

| RATING: MD

REPLACES: N/A

REPLACED BY: N/A

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: The NTZZ09JA provides a MSD DDU Controller CP and desig. label for interface of the IOC shelf to a Memory Systems Division disk drive unit.

REFERENCE DOCUMENTATION: SLZZ09JA 00 01

NTZZ09JA REL 01

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: NTI: Bob Belvin Dept. 3471 (PPK)

MAIN CONTACT: NTI: Richard Mathias Dept. 3471 (PPK)

NTZZ09JA EMC5-01-DDC-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 96 03 19	----- ECM 613 32	Previous history not available MD Section. The NT1X55DA is MD.

The Disk Drive Controller is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
MSD DDU Ctrl CP	NT1X55DA		1	X	Y	AP
Desig. Label For NT1X55AA	P0688790		1	X	Y	AP

EQUIPMENT FLAGGED '##':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) The NT1X55DA can be assigned to shelf mounting positions X = 04, 18, 32, and CP position Y = 04, 06, 08, 10, 12, 14, 16, 18, 20.

RULES:

- AP 1) When PEC NTZZ09JA is ordered, these items are provided.

DUAL DISK DRIVE UNIT SHELF

NTZZ09BA

RATING: MD. Replaced by NTZZ09BB.

ABBREVIATION NAME: DDU

ENGINEERING DESCRIPTION: The Dual Disk Drive Unit shelf functions as the office primary mass storage system.

REFERENCE DOCUMENTATION: SLZZ09BA 00 04
NTZZ09BA REL 04

The Dual Disk Drive Unit Shelf is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Dual DDU Shelf	NT4X00AF		1	04		AP
Dual DDU Assembly	NT4X0023		1	04		AP-01
228 MB Disk Drive	NTZZ09UA			04	10, 18	RUL1
Power Converter (+-5V, +12V, +24V)	NT1X78AA		2	04	02, 26	AP
Desig. Label for NT1X78AA	P0668410		2	04	02, 26	AP
Cable Support Bracket	P0642031		1	04		AP
Mounting Screws	P097F813		2	04		AP
Power Cable	NT0X4301		1	04		AP
Power Cable	NT0X4302		1	04		AP
Power Cable	NT0X95CN		1	04		AP
Power Cable	NT0X95CP		1	04		AP
26AWG Single Green Wire	R0109836			X		RUL2

RULES:

- AP 1) When PEC NTZZ09BA is ordered, these items are provided.
- AP-01 1) This item is always provided to the NT4X00AF and is shown here for completeness.
- RUL1 1) Provide minimum one (1) maximum two (2) NTZZ09UA 228MB Disk Drive per NTZZ09BA Dual Disk Drive Unit Shelf as per customer requirements.
- RUL2 1) When PEC NTZZ09BA is shipped loose to a job site the 4.0 metres of this wire is always required.

DUAL DISK DRIVE UNIT SHELF

PEC CODE: NTZZ09BB

CPC CODE: B0236737

| RATING: MD

REPLACES: N/A

REPLACED BY: N/A

ABBREVIATION NAME: DDU

ENGINEERING DESCRIPTION: The Dual Disk Drive Unit shelf functions as the office primary mass storage system.

REFERENCE DOCUMENTATION: SLZZ09BB 00 01
NTZZ09BB REL 01

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: NTI: Bob Belvin Dept. 3471 (PPK)

MAIN CONTACT: NTI: Richard Mathias Dept. 3471 (PPK)

NTZZ09BB EMC5-01-DDU-1B CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 96 03 19	----- ECM 613 32	Previous history not available MD Section. NT4X00AF is MD, Per ECD 18-45271.

The Dual Disk Drive Unit Shelf is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Dual DDU Shelf	NT4X00AF		1	04		AP
Dual DDU Assembly	NT4X0023		1	04		AP-01
228 MB Disk Drive	NTZZ09UA			04	10,18	RUL1
Power Converter (+-5V, +12V,+24V)	NT1X78AA		1	04	02	AP
Desig. Label for NT1X78AA	P0668410		1	04	02	AP
Power Converter (+-5V, +12V,+24V)	NT1X78AA			04	26	RUL3
Desig. Label for NT1X78AA	P0668410			04	26	RUL3
Filler Face Plate	NT0X50AE			04	26	RUL3
Desig. Label for NT0X50AE	P0591361			04	26	RUL3
Cable Support Bracket	P0642031		1	04		AP
Mounting Screws	P097F813		2	04		AP
Power Cable	NT0X4301		1	04		AP
Power Cable	NT0X4302		1	04		AP
Power Cable	NT0X95CN		1	04		AP
Power Cable	NT0X95CP		1	04		AP
26AWG Single Green Wire	R0109836					RUL2

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase.
Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if
they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufac-
tured and cannot be ordered.

NOTES:

RULES:

- AP 1) When PEC NTZZ09BB is ordered, these items are provided.
- AP-01 1) This item is always provided to the NT4X00AF and is shown here for completeness.
- RUL1 1) Provide minimum one (1) maximum two (2) NTZZ09UA 228MB Disk Drive per NTZZ09BA Dual Disk Drive Unit Shelf as per customer requirements.
- RUL2 1) When PEC NTZZ09BA is shipped loose to a job site the 4.0 metres of this wire is always required.
- RUL3 1) Provide one (1) NT1X78AA Power Converter CP in slot position 26 when two (2) NTZZ09UA 228 MB Disk Drives are provided. Also, provide one (1) designation label, P0668410, with the NT1X78AA.
- 2) When one (1) NTZZ09UA is provided, the one (1) NT1X78AA and label always provided in slot position 02 is sufficient.
- 3) Provide one (1) Filler Face Plate, NT0X50AE, when card position 26 is unequipped. Also, provide one (1) designation label, P0591361, with the NT0X50AE.

DISTRIBUTED PROCESSING PERIPHERAL

PEC CODE: NTZZ09LA

| CPC CODE: B0231873

| RATING: MD For U.S. applications only.

| REPLACES: Not Applicable

| REPLACED BY: NT8X48AD

ABBREVIATION NAME: DPP

ENGINEERING DESCRIPTION: The NTZZ09LA (DPP) allows remote polling of Automatic Message Accounting (AMA) information.

REFERENCE DOCUMENTATION:

SLZZ09LA 00 02

NTZZ09LA REL 02

MARKETS: Applicable markets:

US

ISSUE AUTHOR: Richard Mathias Dept. 3471 (PPK)

MAIN CONTACT: NT: Richard Mathias Dept. 3471 (PPK)

NTZZ09LA EMC5-01-DPP-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 92 12 14	----- ECM 306 19	Previous history not available Remove NT6M56AB as AP-01. MD'd and replaced by NT6M56AD. MD Section. NT8X48AD is rated A&M.
96 03 25	ECM 306 24	

The Distributed Processing Peripheral is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Distrib Process Periph	NT8X48AD		1			AP
CPU/DMA CP	NT6M62BA		2	A, B	01	AP-01
EPROM (BCS29) CP	NT6M63CJ		2	A, B	02	AP
Extended Memory	NT6M64AA		2	A, B	03	AP-01
Error Control II	NT6M65AA		1	A	05	AP-01
Error Control Jumper	NT6M09AB		1	B	05	AP-01
Quad SIO	NT6M60BA		2	A, B	06	AP-01
56 Kbps I/F CP	NT6M94AA		2	A, B	07	AP
SCSI Disk Drive I/F CP	NT6M66BA		2	A, B	11	AP
Data Stream I/F	NT6M70AC		4	A, B	12, 13	AP-01
Bus Terminator	NT6M68AA		2	A, B	14	AP-01
SCSI Disk X-Over CP	NT6M93AA		2	A, B	15	AP
56K Crossover CP	NT6M48AA		1	B	16	AP
Pwr/Alarm Comm CP	NT6M84BA		1	A	16	AP-01
4-Channel Communication CP	NT6M85AA		1	A	17	AP-01
Fan Filter CP	NT6M56AD		2	A, B	18	AP-01
Keyed Status Panel Assy	NT6M59AA			A	19	RUL2
Keyless Status Panel Assy	NT6M59AB			A	19	RUL2
Filler Panel Assy	NT8M59BB			B	19	RUL3
Filler Panel Assy, rover	NT6M59BB			B	19	RUL3
Power Supply Assy	NT6M71AB		2	A, B	20	AP-01
380 Mbyte Disk Drive	NT6M72DD			A, B	21	RUL1
760 Mbyte Disk Drive	NT6M72EA			A, B	21	RUL1
56K Conn CP	NT6M54AL		1	B	26	AP
56K I/F Xover A Cable Assy	NT6M73AJ		1			AP
56K I/F Xover B Cable Assy	NT6M73AK		1			AP
56K Xover Conn Cable Assy	NT6M85CA		1			AP
CA, Emergency Access Term.	NT8M99AB			A		RUL4

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase.
Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if
they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

- AP 1) When PEC NTZZ09LA is ordered, these items are provided.
- AP-01 1) These items are always provided to the NT8M05AB under NT8X48AD which is ordered under NTZZ09LA and are shown for completeness.
- RUL1 1) Provide NT6M72DD 380 MByte DPP, or 760 MByte DPP per office requirements.
- RUL2 1) A status panel is needed to provide a display of DPP processor status and a manual switch for forcing DPP processor changes.
- 2) If a keylock type switch is ordered, provide one (1) NT6M59AA Keyed status panel in position 19 of the A (upper) Chassis.
- 3) If a keyless type switch is ordered, provide one (1) NT6M59AB Keyless status panel in position 19 of the A (upper) Chassis.
- RUL3 1) A filler panel is needed to provide a point for attaching anti-static wrist straps. We provide two types, one with a connector jack that is compatible with 20 ma loop rover (portable) maintenance terminals, and one without the connector jack.
- 2) If the customer orders the filler panel without the jack, provide one (1) NT8M59BB filler panel in position 19 of the B (lower) chassis.
- 3) If the customer orders the filler panel with the jack, provide one (1) NT6M59BB panel in position 19 of the B (lower) chassis.
- RUL4 1) An emergency access terminal port is provided on every DPP to allow maintenance interface even if both MMI links are out of service. If the customer wants to use an emergency

access terminal with the DPP, provide one (1) 25 ft. NT8M99AB E.A.T. cable and attach it to the J4 connector on the A (upper) chassis.

DISTRIBUTED PROCESSING PERIPHERAL 380 MBYTE

PEC CODE: NTZZ09RA

CPC CODE: B0232729

| RATING: MD

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: DPP

ENGINEERING DESCRIPTION: The NTZZ09RA (DPP) allows remote polling of Automatic Message Accounting (AMA) information. It includes two (2) 380 MByte disk drives.

REFERENCE DOCUMENTATION: SLZZ09RA 00 02
NTZZ09RA REL 02

MARKETS: Applicable markets:

Canada
US
Europe
Asia/Pacific
CALA

ISSUE AUTHOR: NTI: Bob Belvin Dept. 3471 (PPK)

MAIN CONTACT: NTI: Erica Keltner Dept. 3471 (PPK)

NTZZ09RA EMC5-01-DPP-3 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 94 04 18	----- ECM 613 19	Previous history not available Change Market from Canada only to all valid markets. MD Section. NT8X48AD is rated A&M.
96 03 25	ECM 306 24	

The Distributed Processing Peripheral 380 MByte is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Distrib Process Periph	NT8X48AD		1			AP
CPU/DMA CP	NT6M62BA		2	A, B	01	AP-01
EPROM (BCS29) CP	NT6M63CJ		2	A, B	02	AP
Extended Memory	NT6M64AA		2	A, B	03	AP-01
Error Control II	NT6M65AA		1	A	05	AP-01
Error Control Jumper	NT6M09AB		1	B	05	AP-01
Quad SIO	NT6M60BA		2	A, B	06	AP-01
56 Kbps I/F CP	NT6M94AA		2	A, B	07	AP
SCSI Disk Drive I/F CP	NT6M66BA		2	A, B	11	AP
Data Stream I/F	NT6M70AC		4	A, B	12, 13	AP-01
Bus Terminator	NT6M68AA		2	A, B	14	AP-01
SCSI Disk X-Over CP	NT6M93AA		2	A, B	15	AP
Pwr/Alarm Comm CP	NT6M84BA		1	A	16	AP-01
56K Crossover CP	NT6M48AA		1	B	16	AP
4-Channel Communication CP	NT6M85AA		1	A	17	AP-01
Fan Filter CP	NT6M56AD		2	A, B	18	AP-01
Keyed Status Panel Assy	NT6M59AA			A	19	RUL1
Keyless Status Panel Assy	NT6M59AB			A	19	RUL1
Filler Panel Assy	NT8M59BB			B	19	RUL2
Filler Panel Assy, rover	NT6M59BB			B	19	RUL2
Power Supply Assy	NT6M71AB		2	A, B	20	AP-01
380 Mbyte Disk Drive	NT6M72DD		2	A, B	21	AP
56K Conn CP	NT6M54AL		1	B	26	AP
56K I/F Xover A Cable Assy	NT6M73AJ		1			AP
56K I/F Xover B Cable Assy	NT6M73AK		1			AP
56K Xover Conn Cable Assy	NT6M85CA		1			AP
CA, Emergency Access Term.	NT8M99AB			A		RUL3
Cassy, Modem BMC/DPP	NT8M99AG		1			AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

- AP 1) When PEC NTZZ09RA is ordered, these items are provided.
- AP-01 1) These items are always provided to the NT8M05AB under NT8X48AD which is ordered under NTZZ09RA and are shown for completeness.
- RUL1 1) A status panel is needed to provide a display of DPP processor status and a manual switch for forcing DPP processor changes.
- 2) If a keylock type switch is ordered, provide one (1) NT6M59AA Keyed status panel in position 19 of the A (upper) Chassis.
- 3) If a keyless type switch is ordered, provide one (1) NT6M59AB Keyless status panel in position 19 of the A (upper) Chassis.
- RUL2 1) A filler panel is needed to provide a point for attaching anti-static wrist straps. We provide two types, one with a connector jack that is compatible with 20 ma loop rover (portable) maintenance terminals, and one without the connector jack.
- 2) If the customer orders the filler panel without the jack, provide one (1) NT8M59BB filler panel in position 19 of the B (lower) chassis.
- 3) If the customer orders the filler panel with the jack, provide one (1) NT6M59BB panel in position 19 of the B (lower) chassis.
- RUL3 1) An emergency access terminal port is provided on every DPP to allow maintenance interface even if both MMI links are out of service. If the customer wants to use an emergency access terminal with the DPP, provide one (1) 25 ft. NT8M99AB E.A.T. cable and attach it to the J4 connector on the A (upper) chassis.

DISTRIBUTED PROCESSING PERIPHERAL 760 MBYTE

PEC CODE: NTZZ09SA

CPC CODE: B0232728

| RATING: MD

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: DPP

ENGINEERING DESCRIPTION: The NTZZ09SA (DPP) allows remote polling of Automatic Message Accounting (AMA) information. It includes two (2) 760 MByte disk drives.

REFERENCE DOCUMENTATION: SLZZ09SA 00 02
NTZZ09SA REL 02

MARKETS: Applicable markets:

Canada
US
Europe
Asia/Pacific
CALA

ISSUE AUTHOR: Bob Belvin Dept. 3471 (PPK)

MAIN CONTACT: Erica Keltner Dept. 3471 (PPK)

NTZZ09SA EMC5-01-DPP-4 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 92 12 14	----- ECM 306 19	Previous history not available Remove NT6M56AB as AP-01. MD'd and replaced by NT6M56AD.
94 04 18	ECM 613 19	Change market from Canada to all valid markets.
96 03 25	ECM 306 24	MD Section. NT8X48AD is rated A&M.

The Distributed Processing Peripheral 760 MByte is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Distrib Process Periph	NT8X48AD		1			AP
CPU/DMA CP	NT6M62BA		2	A, B	01	AP-01
EPROM (BCS29) CP	NT6M63CJ		2	A, B	02	AP
Extended Memory	NT6M64AA		2	A, B	03	AP-01
Error Control II	NT6M65AA		1	A	05	AP-01
Error Control Jumper	NT6M09AB		1	B	05	AP-01
Quad SIO	NT6M60BA		2	A, B	06	AP-01
56 Kbps I/F CP	NT6M94AA		2	A, B	07	AP
SCSI Disk Drive I/F CP	NT6M66BA		2	A, B	11	AP
Data Stream I/F	NT6M70AC		4	A, B	12, 13	AP-01
Bus Terminator	NT6M68AA		2	A, B	14	AP-01
SCSI Disk X-Over CP	NT6M93AA		2	A, B	15	AP
56K Crossover CP	NT6M48AA		1	B	16	AP
Pwr/Alarm Comm CP	NT6M84BA		1	A	16	AP-01
4-Channel Communication CP	NT6M85AA		1	A	17	AP-01
Fan Filter CP	NT6M56AD		2	A, B	18	AP-01
Keyed Status Panel Assy	NT6M59AA			A	19	RUL1
Keyless Status Panel Assy	NT6M59AB			A	19	RUL1
Filler Panel Assy	NT8M59BB			B	19	RUL2
Filler Panel Assy, rover	NT6M59BB			B	19	RUL2
Power Supply Assy	NT6M71AB		2	A, B	20	AP-01
760 Mbyte Disk Drive	NT6M72EA		2	A, B	21	AP
56K Conn CP	NT6M54AL		1	B	26	AP
56K I/F Xover A Cable Assy	NT6M73AJ		1			AP
56K I/F Xover B Cable Assy	NT6M73AK		1			AP
56K Xover Conn Cable Assy	NT6M85CA		1			AP
CA, Emergency Access Term.	NT8M99AB			A		RUL3
Cassy, HSDA/GDC 56K Modems	NTNX69AA		1			AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

- AP 1) When PEC NTZZ09SA is ordered, these items are provided.
- AP-01 1) These items are always provided to the NT8M05AB under NT8X48AD which is ordered under NTZZ09SA and are shown for completeness.
- RUL1 1) A status panel is needed to provide a display of DPP processor status and a manual switch for forcing DPP processor changes.
- 2) If a keylock type switch is ordered, provide one (1) NT6M59AA Keyed status panel in position 19 of the A (upper) Chassis.
- 3) If a keyless type switch is ordered, provide one (1) NT6M59AB Keyless status panel in position 19 of the A (upper) Chassis.
- RUL2 1) A filler panel is needed to provide a point for attaching anti-static wrist straps. We provide two types, one with a connector jack that is compatible with 20 ma loop rover (portable) maintenance terminals, and one without the connector jack.
- 2) If the customer orders the filler panel without the jack, provide one (1) NT8M59BB filler panel in position 19 of the B (lower) chassis.
- 3) If the customer orders the filler panel with the jack, provide one (1) NT6M59BB panel in position 19 of the B (lower) chassis.
- RUL3 1) An emergency access terminal port is provided on every DPP to allow maintenance interface even if both MMI links are out of service. If the customer wants to use an emergency access terminal with the DPP, provide one (1) 25 ft. NT8M99AB E.A.T. cable and attach it to the J4 connector on the A (upper) chassis.

DPP SHELF

PEC CODE: NTZZ09XA

CPC CODE: B0235768

RATING: MD, U.S. applications only

REPLACES: Not Applicable

REPLACED BY: NT8X48AD

ABBREVIATION NAME: DPP

ENGINEERING DESCRIPTION: The NTZZ09XA allows remote polling of Automatic Message Accounting (AMA) information. Available disk sizes are 140 Mbyte and 380 Mbyte.

REFERENCE DOCUMENTATION: SLZZ09XA 00 01
NTZZ09XA REL 01

MARKETS: Applicable markets:

US

ISSUE AUTHOR: Richard Mathias Dept. 3471 (PPK)

MAIN CONTACT: NT: Richard Mathias Dept. 3471 (PPK)

NTZZ09XA EMC5-01-DPP-5 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 92 12 14	----- ECM 306 19	Previous history not available Remove NT6M56AB as AP-01. MD'd and replaced by NT6M56AD. MD Section. NT8X48AD is rated A&M.
96 03 25	ECM 306 24	

The DPP SHELF is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Distrib Process Periph	NT8X48AD		1			AP
CPU/DMA CP	NT6M62BA		2	A, B	01	AP-01
EPROM (BCS21-29) CP	NT6M63CL		2	A, B	02	AP
Extended Memory	NT6M64AA		2	A, B	03	AP-01
Error Control II	NT6M65AA		1	A	05	AP-01
Error Control Jumper	NT6M09AB		1	B	05	AP-01
Quad SIO	NT6M60BA		2	A, B	06	AP-01
Disk Drive I/F CP	NT6M66AL			A, B	11	RUL1
Disk Drive I/F CP	NT6M66AH			A, B	11	RUL1
Data Stream I/F	NT6M70AC		4	A, B	12, 13	AP-01
Bus Terminator	NT6M68AA		2	A, B	14	AP-01
Disk Crossover CP	NT6M72AE		2	A, B	15	AP
Pwr/Alarm Comm CP	NT6M84BA		1	A	16	AP-01
4-Channel Communication CP	NT6M85AA		1	A	17	AP-01
Fan Filter CP	NT6M56AD		2	A, B	18	AP-01
Keyed Status Panel Assy	NT6M59AA			A	19	RUL3
Keyless Status Panel Assy	NT6M59AB			A	19	RUL3
Filler Panel Assy	NT8M59BB			B	19	RUL4
Filler Panel Assy, rover	NT6M59BB			B	19	RUL4
Power Supply Assy	NT6M71AB		2	A, B	20	AP-01
140MB Disk Drive Assy	NT6M72BA			A, B	21	RUL2
380MB Disk Drive Assy	NT6M72DA			A, B	21	RUL2
CA, Emergency Access Term.	NT8M99AB			A		RUL5

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase.
Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if
they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufac-
tured and cannot be ordered.

NOTES:

RULES:

- AP 1) When PEC NTZZ09XA is ordered, these items are provided.
- AP-01 1) These items are always provided to the NT8M05AB under NT8X48AD which is ordered under NTZZ09XA and are shown for completeness.
- RUL1 1) Provide two (2) NT6M66AL Disk Drive I/F circuit packs when the 140 MByte disk drive is selected or provide two (2) NT6M66AH disk drive I/F circuit packs when the 380 MByte disk drive is selected. Mount one circuit pack each in position 11 of the A (upper) and B (lower) chassis. 56Kbps and the Compression options are not supported by this configuration.
- RUL2 1) Provide two (2) NT6M72BA when 140 MByte Disk drive is selected or two (2) NT6M72DA when 380 MByte disk drive is selected. Mount one disk drive in position 21 of the A (upper) and B (lower) chassis.
- RUL3 1) A status panel is needed to provide a display of DPP processor status and a manual switch for forcing DPP processor changes.
- 2) If a keylock type switch is ordered, provide one (1) NT6M59AA Keyed status panel in position 19 of the A (upper) Chassis.
- 3) If a keyless type switch is ordered, provide one (1) NT6M59AB Keyless status panel in position 19 of the A (upper) Chassis.
- RUL4 1) A filler panel is needed to provide a point for attaching anti-static wrist straps. We provide two types, one with a connector jack that is compatible with 20 ma loop rover (portable) maintenance terminals, and one without the connector jack.
- 2) If the customer orders the filler panel without the jack, provide one (1) NT8M59BB filler panel in position 19 of the B (lower) chassis.

- 3) If the customer orders the filler panel with the jack, provide one (1) NT6M59BB panel in position 19 of the B (lower) chassis.

- RUL5 1) An emergency access terminal port is provided on every DPP to allow maintenance interface even if both MMI links are out of service. If the customer wants to use an emergency access terminal with the DPP, provide one (1) 25 ft. NT8M99AB E.A.T. cable and attach it to the J4 connector on the A (upper) chassis.

DPP SHELF (COMPRESSION)

PEC CODE: NTZZ09YA

CPC CODE: B0235767

RATING: MD, U.S. applications only

REPLACES: Not Applicable

REPLACED BY: NT8X48AD

ABBREVIATION NAME: DPP

ENGINEERING DESCRIPTION: The NTZZ09YA allows remote polling of Automatic Message Accounting (AMA) information. It includes the 56Kbps and Compression polling options. Available disk sizes are 140, 380, and 760 MByte.

REFERENCE DOCUMENTATION: SLZZ09YA 00 01
NTZZ09YA REL 01

MARKETS: Applicable markets:

US

ISSUE AUTHOR: Richard Mathias Dept. 3471 (PPK)

MAIN CONTACT: NT: Richard Mathias Dept. 3471 (PPK)

NTZZ09YA EMC5-01-DPP-6 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 92 12 14	----- ECM 306 19	Previous history not available Remove NT6M56AB as AP-01. MD'd and replaced by NT6M56AD. MD Section. NT8X48AD is rated A&M.
96 03 25	ECM 306 24	

The DPP SHELF (Compression) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Distrib Process Periph	NT8X48AD		1			AP
CPU/DMA CP	NT6M62BA		2	A, B	01	AP-01
EPROM (BCS21-29) CP	NT6M63CJ		2	A, B	02	AP
Extended Memory	NT6M64AA		2	A, B	03	AP-01
Error Control II	NT6M65AA		1	A	05	AP-01
Error Control Jumper	NT6M09AB		1	B	05	AP-01
Quad SIO	NT6M60BA		2	A, B	06	AP-01
56K/Compression I/F CP	NT6M94BA		2	A, B	07	AP
SCSI Disk Drive I/F CP	NT6M66BA		2	A, B	11	RUL1
SCSI Disk Drive 140 I/F CP	NT6M66BC		2	A, B	11	RUL1
Data Stream I/F	NT6M70AC		4	A, B	12, 13	AP-01
Bus Terminator	NT6M68AA		2	A, B	14	AP-01
SCSI Disk Crossover CP	NT6M93AA		2	A, B	15	AP
56K Crossover CP	NT6M48AA		1	B	16	AP
Pwr/Alarm Comm CP	NT6M84BA		1	A	16	AP-01
4-Channel Communication CP	NT6M85AA		1	A	17	AP-01
Fan Filter CP	NT6M56AD		2	A, B	18	AP-01
Keyed Status Panel Assy	NT6M59AA			A	19	RUL3
Keyless Status Panel Assy	NT6M59AB			A	19	RUL3
Filler Panel Assy	NT8M59BB			B	19	RUL4
Filler Panel Assy, rover	NT6M59BB			B	19	RUL4
Power Supply Assy	NT6M71AB		2	A, B	20	AP-01
140MB Disk Drive Assy	NT6M72DE		2	A, B	21	RUL2
380MB Disk Drive Assy	NT6M72DD		2	A, B	21	RUL2
760MB Disk Drive Assy	NT6M72EA		2	A, B	21	RUL2
56K Conn CP	NT6M54AL		1	B	26	AP
56K I/F Xover A Cable assy	NT6M73AJ		1			AP
56K I/F Xover B Cable assy	NT6M73AK		1			AP
56K Xover Conn Cable Assy	NT6M85CA		1			AP
CA, Emergency Access Term.	NT8M99AB			A		RUL5

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

- AP 1) When PEC NTZZ09YA is ordered, these items are provided.
- AP-01 1) These items are always provided to the NT8M05AB under NT8X48AD which is ordered under NTZZ09YA and are shown for completeness.
- RUL1 1) Provide two (2) NT6M66BA Disk Drive I/F circuit packs when the 760 or 380 MByte disk drive is selected or provide two (2) NT6M66BC disk drive I/F circuit packs when the 140 MByte disk drive is selected. Mount one circuit pack each in position 11 of the A (upper) and B (lower) chassis.
- RUL2 1) Provide two (2) NT6M72DE when 140 MByte is selected, two (2) NT6M72DD when 380 MByte is selected, or two (2) NT6M72EA when 760 MByte disk drive is selected. Mount one disk drive each in position 21 of the A (upper) and B (lower) chassis.
- RUL3 1) A status panel is needed to provide a display of DPP processor status and a manual switch for forcing DPP processor changes.
- 2) If a keylock type switch is ordered, provide one (1) NT6M59AA Keyed status panel in position 19 of the A (upper) Chassis.

- 3) If a keyless type switch is ordered, provide one (1) NT6M59AB Keyless status panel in position 19 of the A (upper) Chassis.
- RUL4
- 1) A filler panel is needed to provide a point for attaching anti-static wrist straps. We provide two types, one with a connector jack that is compatible with 20 ma loop rover (portable) maintenance terminals, and one without the connector jack.
 - 2) If the customer orders the filler panel without the jack, provide one (1) NT8M59BB filler panel in position 19 of the B (lower) chassis.
 - 3) If the customer orders the filler panel with the jack, provide one (1) NT6M59BB panel in position 19 of the B (lower) chassis.
- RUL5
- 1) An emergency access terminal port is provided on every DPP to allow maintenance interface even if both MMI links are out of service. If the customer wants to use an emergency access terminal with the DPP, provide one (1) 25 ft. NT8M99AB E.A.T. cable and attach it to the J4 connector on the A (upper) chassis.

INPUT/OUTPUT CONTROLLER MODULE (NT40)

PEC CODE: NTZZ09VA

CPC CODE: B0233003

| RATING: MD

REPLACES: Not applicable

| REPLACED BY: NTZZ09CA

ABBREVIATION NAME: IOC

ENGINEERING DESCRIPTION: The Input/Output Controller Module houses Device Controller cards, each of which has its own subsidiary map position. This Block is compatible with the NT40 core.

REFERENCE DOCUMENTATION: SLZZ09VA 00 01
NTZZ09VA REL 01

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: Samuel Zhou Dept. S646 (BRW)

MAIN CONTACT: Erica Keltner Dept. 3471 (RTP)

NTZZ09VA EMC5-01-IOC-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 93 10 27	----- ECM 613 16	Previous history not available Rate change pending. Replaced by NTZZ09VB.
93 12 20	ECM 613 18	EC 018-41895: Md'd and relplaced by NTZZ09CA.

The Input/Output Controller Module (NT40) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
I/O Controller Module	NT1X61AD		1	X		AP
I/O Shelf Assembly	NT1X6112		1	X		AP-01
I/O Controller Common CP	NT1X61AE		1	X		AP
I/O Message Controller CP	NT1X62AB		1	X	02	AP
Desig. Label (NT1X62AB)	P0591364		1	X	02	AP
Filler Face Plate 0.875	NT0X50AA		10	X	1, 5, 7, 9, 11, 13, 15, 17, 19, 21	AP-02
I/O Device Controller CP	As Req'd			X	4, 6, 8, 10, 12, 14, 16, 18, 20	RUL1
Filler Face Plate 0.875	NT0X50AA			X	4, 6, 8, 10, 12, 14, 16, 18, 20	RUL2
I/O Control Terminator	NT0X67AA		1	X	22	AP-02
Filler Face Plate 1.72	NT0X50AF		1	X	23	AP-02
Power Converter	NT2X70AE		1	X	25	AP
Desig. Label (NT2X70AE)	P0698943		1	X	25	AP
26AWG Single Green Wire	R0109836			X		RUL3

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES: 1) "X" Can be one of 04,18,32.

RULES:

AP 1) When PEC NTZZ09VA is ordered, these items are provided.

AP-01 1) This item is always provided to the NT1X61AD and is shown here for completeness.

AP-02 1) This item is always provided to the NT1X61AE and is shown here for completeness.

RUL1 1) The I/O Controller Module (IOC) provides space to mount up to nine (9) I/O device control cards. Refer to Table B, Section EMB14-02-000, for the types of control cards and their respective labels which can mount on NTZZ09VA and related assignment restrictions.

RUL2 1) When customer requirements specify that Filler Face Plates are to be ordered, provide one (1) NT0X50AA for each location which is not to be equipped with an I/O device control card.

RUL3 1) When PEC NTZZ09VA is shipped loose to a job site then 4.0 metres of this wire is always required.

INPUT/OUTPUT CONTROLLER MODULE (NT-40)

PEC CODE: NTZZ09VB

CPC CODE: B0239693

| RATING: MD

REPLACES: NTZZ09VA

| REPLACED BY: NTZZ09CB

ABBREVIATION NAME: IOC

ENGINEERING DESCRIPTION: The Input/Output Controller Module houses Device Controller cards, each of which has its own subsidiary MAP position. This Building Block is compatible with the NT-40 core.

REFERENCE DOCUMENTATION: SLZZ09VB 00 01
NTZZ09VB REL 01

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: Samuel Zhou Dept. S646 (BRW)

MAIN CONTACT: Erica Keltner Dept. 3471 (RTP)

NTZZ09VB EMC5-01-IOC-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 10 27 93 12 20	ECM 613 16 ECM 613 18	Initial introduction. EC 018-41895: Md'd and relplaced by NTZZ09CB.

The Input/Output Controller Module (NT-40) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
I/O Controller Module	NT1X61AG		1	X		AP
I/O Shelf Assembly	NT1X6113		1	X		AP-01
I/O Message Controller CP	NT1X62AB		1	X	02	AP
Desig. Label (NT1X62AB)	P0591364		1	X	02	AP
I/O Controller Common CP	NT1X61AE		1	X		AP
Filler Face Plate 0.875	NT0X50AA		10	X	1, 5, 7, 9, 11, 13, 15, 17, 19, 21	AP-02
I/O Control Terminator	NT0X67AA		1	X	22	AP-02
Filler Face Plate 1.72	NT0X50AF		1	X	23	AP-02
Power Converter	NT2X70AE		1	X	25	AP
Desig. Label (NT2X70AE)	P0698943		1	X	25	AP
I/O Device Controller CP	As Req'd			X	4, 6, 8, 10, 12, 14, 16, 18, 20	RUL1
Filler Face Plate 0.875	NT0X50AA			X	4, 6, 8, 10, 12, 14, 16, 18, 20	RUL2
26AWG Single Green Wire	R0109836			X		RUL3

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) X = Shelf Position 04, 18, 32.

RULES:

- AP 1) When PEC NTZZ09VB is ordered, these items are provided.
- AP-01 1) This item is always provided to the NT1X61AG and is shown here for completeness.
- AP-02 1) This item is always provided to the NT1X61AE and is shown here for completeness.
- RUL1 1) The I/O Controller Module (IOC) provides space to mount up to nine (9) I/O device control cards. Refer to Table B, Section EMB14-02-000, for the types of control cards and their respective labels which can mount on NTZZ09VB and related assignment restrictions.
- RUL2 1) Provide one (1) NT0X50AA for each slot position which is not equipped with an I/O device control card.
- RUL3 1) When IOC NTZZ09VB is field installed, provide 5.0 metres of NT-26CR (R0109836) wire coloured green.

INPUT/OUTPUT CONTROLLER MODULE

PEC CODE: NTZZ09CA

CPC CODE: B0231881

| RATING: MD

REPLACES: NTZZ09VA

REPLACED BY: NTZZ09CB

ABBREVIATION NAME: IOC

ENGINEERING DESCRIPTION: The Input/Output Controller Module houses Device Controller cards, each of which has its own subsidiary MAP position.

REFERENCE DOCUMENTATION: SLZZ09CA 00 04
NTZZ09CA REL 04

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

| ISSUE AUTHOR: NTI Erica Keltner Dept. 3471 (PPK)

MAIN CONTACT: NTI Erica Keltner Dept. 3471 (PPK)

NTZZ09CA EMC5-01-IOC-3 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
93 10 27	ECM 613 16	Rate change pending. Replaced by NTZZ09CB.
93 12 20	ECM 613 18	ECD 018-40186 - Replace NT1X62AB/CA by NT1X62CB.
94 07 08	ECM 613 22	ECD 018-42674 - Replaces NT0X50AF in NT1X61AE with 2 NT0X50AA's. This is shown on AP-02 items. ECD 018-41414 - MD's NT1X61AD, so NTZZ09CA is MD'd.

The Input/Output Controller Module is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
# I/O Controller Module	NT1X61AD		1	X		AP
I/O Shelf Assembly	NT1X6112		1	X		AP-01
I/O Controller Common CP	NT1X61AE		1	X		AP
I/O Message Controller CP	NT1X62CB		1	X	02	AP
Desig. Label (NT1X62CB)	P0745105		1	X	02	AP
Filler Face Plate 0.875	NT0X50AA		10	X	1, 5, 7, 9, 11, 13, 15, 17, 19, 21	AP-02
I/O Device Controller CP	As Req'd			X	4, 6, 8, 10, 12, 14, 16, 18, 20	RUL1
Filler Face Plate 0.875	NT0X50AA			X	4, 6, 8, 10, 12, 14, 16, 18, 20	RUL2
I/O Control Terminator	NT0X67AA		1	X	22	AP-02
Filler Face Plate .875	NT0X50AA		2	X	23, 24	AP-02
Power Converter	NT2X70AE		1	X	25	AP
Desig. Label (NT2X70AE)	P0698943		1	X	25	AP
26AWG Single Green Wire	R0109836			X		RUL3

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT1X61AD	MD	NT1X61AG

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES: 1) "X" Can be one of 04,18,32.

RULES:

AP 1) When PEC NTZZ09CA is ordered, these items are provided.

AP-01 1) This item is always provided to the NT1X61AD and is shown here for completeness.

AP-02 1) This item is always provided to the NT1X61AE and is shown here for completeness.

RUL1 1) The I/O Controller Module (IOC) provides space to mount up to nine (9) I/O device control cards. Refer to Table B, Section EMB14-02-000, for the types of control cards and their respective labels which can mount on NTZZ09CA and related assignment restrictions.

RUL2 1) When customer requirements specify that Filler Face Plates are to be ordered, provide one (1) NT0X50AA for each location which is not to be equipped with an I/O device control card.

RUL3 1) When PEC NTZZ09CA is shipped loose to a job site then 4.0 metres of this wire is always required.

INPUT/OUTPUT CONTROLLER MODULE

PEC CODE: NTZZ09CB

CPC CODE: B0239692

| RATING: MD

REPLACES: NTZZ09CA, NTZZ09VB

| REPLACED BY: NTZZ09CC

ABBREVIATION NAME: IOC

ENGINEERING DESCRIPTION: The Input/Output Controller Module houses Device Controller cards, each of which has its own subsidiary MAP position.

REFERENCE DOCUMENTATION: SLZZ09CB 00 02
NTZZ09CB REL 02

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: Erica Keltner Dept. 3471 (PPK)

MAIN CONTACT: Erica Keltner Dept. 3471 (PPK)

NTZZ09CB EMC5-01-IOC-4 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 10 27	ECM 613 16	Initial introduction.
93 12 20	ECM 613 18	ECD 018-40186 - Replace NT1X62AB/CA by NT1X62CB.
94 10 07	ECM 613 24	MD this building block and replace with NTZZ09CC. Pricing drove this change in conjunction with the MD'ing of NT1X61AE and making the NT0X50AA's from NT1X61AE provisionable.

The Input/Output Controller Module is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
I/O Controller Module	NT1X61AG		1	X		AP
I/O Shelf Assembly	NT1X6113		1	X		AP-01
I/O Message Controller CP	NT1X62CB		1	X	02	AP
Desig. Label (NT1X62CA)	P0745105		1	X	02	AP
I/O Controller Common CP	NT1X61AE		1	X		AP
Filler Face Plate 0.875	NT0X50AA		10	X	1, 5, 7, 9, 11, 13, 15, 17, 19, 21	AP-02
I/O Control Terminator	NT0X67AA		1	X	22	AP-02
Filler Face Plate 1.72	NT0X50AF		1	X	23	AP-02
Power Converter	NT2X70AE		1	X	25	AP
Desig. Label (NT2X70AE)	P0698943		1	X	25	AP
I/O Device Controller CP	As Req'd			X	4, 6, 8, 10, 12, 14, 16, 18, 20	RUL1
Filler Face Plate 0.875	NT0X50AA			X	4, 6, 8, 10, 12, 14, 16, 18, 20	RUL2
26AWG Single Green Wire	R0109836			X		RUL3

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) X = Shelf Position 04, 18, 32.

RULES:

- AP 1) When PEC NTZZ09CB is ordered, these items are provided.
- AP-01 1) This item is always provided to the NT1X61AG and is shown here for completeness.
- AP-02 1) This item is always provided to the NT1X61AE and is shown here for completeness.
- RUL1 1) The I/O Controller Module (IOC) provides space to mount up to nine (9) I/O device control cards. Refer to Table B, Section EMB14-02-000, for the types of control cards and their respective labels which can mount on NTZZ09CB and related assignment restrictions.
- RUL2 1) Provide one (1) NT0X50AA for each slot position which is not equipped with an I/O device control card.
- RUL3 1) When IOC NTZZ09CB is field installed, provide 5.0 metres of NT-26CR (R0109836) wire coloured green.

EARTHQUAKE IOE FRAME
US ONLY

NTZZ09WA

RATING: MD. Replaced by NTZZ09TB

ABBREVIATION NAME: IOE

ENGINEERING DESCRIPTION: The Earthquake IOE Frame houses the DMS
input/output devices, mountable on a frame.REFERENCE DOCUMENTATION: SLZZ09WA 00 01
NTZZ09WA REL 01MARKETS: Applicable markets:
US

NTZZ09WA EMC5-01-IOE-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 92 11 09	----- ECM 613 08	Previous history not available Change power cable rules for ROS shelf (MS0X43AD) Added NTZZ09BB to replace NTZZ09BA.

The Earthquake IOE Frame US Only is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
IOE Frame	NT0X43AD		1			AP
Mag Tape Drive Unit (Cook)	NT0X44AB	MTD		18, 51		RUL1
Frame Supervisory Panel	NT0X28AL	FSP	1	45		AP-01
Power Control & Alarm CP	NT0X36AB		1	45		AP
FSP Cover	P0673914			45		AP
* Disk Drive Unit Shelf	NTZZ09BA	DDU		04		RUL7
Disk Drive Unit Shelf	NTZZ09BB	DDU		04		RUL7
I/O Controller Module	NTZZ09CA	IOC		04, 18, 32		RUL2
Dist. Processor Peripheral	NTZZ09LA	DPP		18, 51		RUL3
Stratum II Rmt Osc. Shelf	NTZZ09MA	ROS		04, 32		RUL4
Filler Panel	P0575239			04, 18, 32, 51, 65		RUL5
Power Cable	NT0X95BA			18, 32		RUL6
Power Cable	NT0X95BD			32		RUL6
Power Cable	NT0X95BF			18, 32		RUL6
Power Cable	NT0X95BG			18		RUL6
Power Cable	NT0X95BJ			04		RUL6
Power Cable	NT0X95BK			04		RUL6
Power Cable	NT0X95CE			32		RUL6
Power Cable	NT0X4301			04		RUL6
Power Cable	NT0X4302			04		RUL6
Wiring: Stratum II/2.5 DMS-Core	NT0X43WC					RUL8
Wiring: Stratum II/2.5 DMS-Core	NT0X43WD					RUL9
Earthquake Framework	NT0X25AH	FW	1			AP

| FLAGS:

| * MD. Replaced by NTZZ09BB.

NOTES:

RULES:

- AP 1) When PEC NTZZ09WA is ordered, these items are provided.
- AP-01 1) This PEC is always provided to the NT0X43AD and is shown here for completeness.
- 2) a) Each NT0X28AL, FSP, comes equipped with one NT0X36AB, Power Control and Alarm card, which serves IOC or DDU shelves in positions 32 and 04.
- RUL1 1) The standard DMS MTD is the Cook Electric drive, NT0X44AB.
- 2) For an office which will have MTD's only, Magnetic Tape Drive Units are provisioned as follows:
- a) A minimum of two (2) is required per system, one for maintenance and one for back-up or image/spare.
- b) An additional two (2) may be required for LAMA/CAMA or Distributed Processor Peripheral (DPP).
- c) An extra MTD may be provided for separate Operational Measurement (OM) support.
- d) Maximum of ten (10) MTD per system.
- 3) In a disk office one MTD is retained primarily to enable physical transportation of data to and from the office and secondarily as a back up to the DDU.
- 4) The first MTD on an IOE frame must mount on position 51.
- 5) See figures one (1) through nine (9) for various frame configurations of MTD's.
- RUL2 1) A minimum of two I/O Controller Modules (IOC:00, IOC:01) is required per system. Provide two (2) NTZZ09CA.

- 2) Each shelf accommodates up to nine I/O device controller cards.
 - 3) Provide one (1) NTZZ09CA I/O Controller Module for each additional nine I/O Device Controller Cards to be accommodated. Number these shelves IOC:02 and up.
 - 4) Refer to EMB14 for IOC circuit pack assignments.
 - 5) See figures one (1) through nine (9) for various frame configurations of IOC's.
 - 6) The IOC shelf and the devices (MTD, DDU, MAP etc.) it interfaces should be cabled to the same power feed on the Power Distribution Center (PDC).
- RUL3
- 1) The Distributed Processor Peripheral (DPP) will allow remote polling of Automatic Message Accounting (AMA) in the DMS-100F per NTX243AA software package.
 - 2) The DPP Disk Drive Units are now provisionable under the Product Engineering Code (PEC), NTZZ09LA. Initial DPP offices will provide one (1) NTZZ09LA and either 380 or 760 MByte DPP 5 1/4" Winchester Disk Drive per office requirements.
 - 3) The 380 MByte AMATPS call record capacity is 3,341,520 AMA records. The 760 MByte DPP AMATPS call record capacity is 6,336,200 records.
- Note - These figures represent actual storage values. DPP warning alarms will occur as these figures are reached.
- RUL4
- 1) Provide one (1) NTZZ09MA Stratum II Oscillator Shelf when Stratum II feature is required.
 - 2) The NTZZ09MA Shelf requires two -48V feeds and two sets of alarm and control signals from the FSP.
 - 3) The following rules apply to Stratum Shelf configurations:
 - a) There must be two available shelf positions in the IOE frame.
 - b) The IOE frame must be located within 200 feet of the CMC's or SuperNode cabinet.
 - c) The Stratum shelf must be powered from the same PDC as the CMC shelf or SuperNode cabinet.

- 4) The NTZZ09MA has two backplanes mounted on the same shelf. Backplane "A" is located at slot positions 1 through 14 and backplane "B" is located at slot positions 15 through 27. There is a power converter located at slot 6 for backplane "A" and at position 20 for backplane "B".

RUL5 1) Provide fourteen inch (355.6 millimeters) filler panels in positions not equipped.

RUL6 1) Depending on position of IOC (NTZZ09CA) and ROS (NTZZ09MA) shelf power cables will be ordered as follows:

- a)
 - i) IOC position 04 NT0X95BK & NT0X95BJ
 - ii) IOC position 32 NT0X95BA & NT0X95BD
 - iii) IOC position 18 NT0X95BF & NT0X95BG
- b)
 - i) ROS position 04 NT0X4301 & NT0X4302 for "A" back-plane
 - ii) ROS position 04 NT0X95BJ & NT0X95BK for "B" back-plane
 - iii) ROS position 32 NT0X95BF & NT0X95CE for "A" back-plane
 - iv) ROS position 32 NT0X95BA & NT0X95BD for "B" back-plane

RUL7 1) The NTZZ09BA/NTZZ09BB is to be mounted in IOE shelf position 04 only.

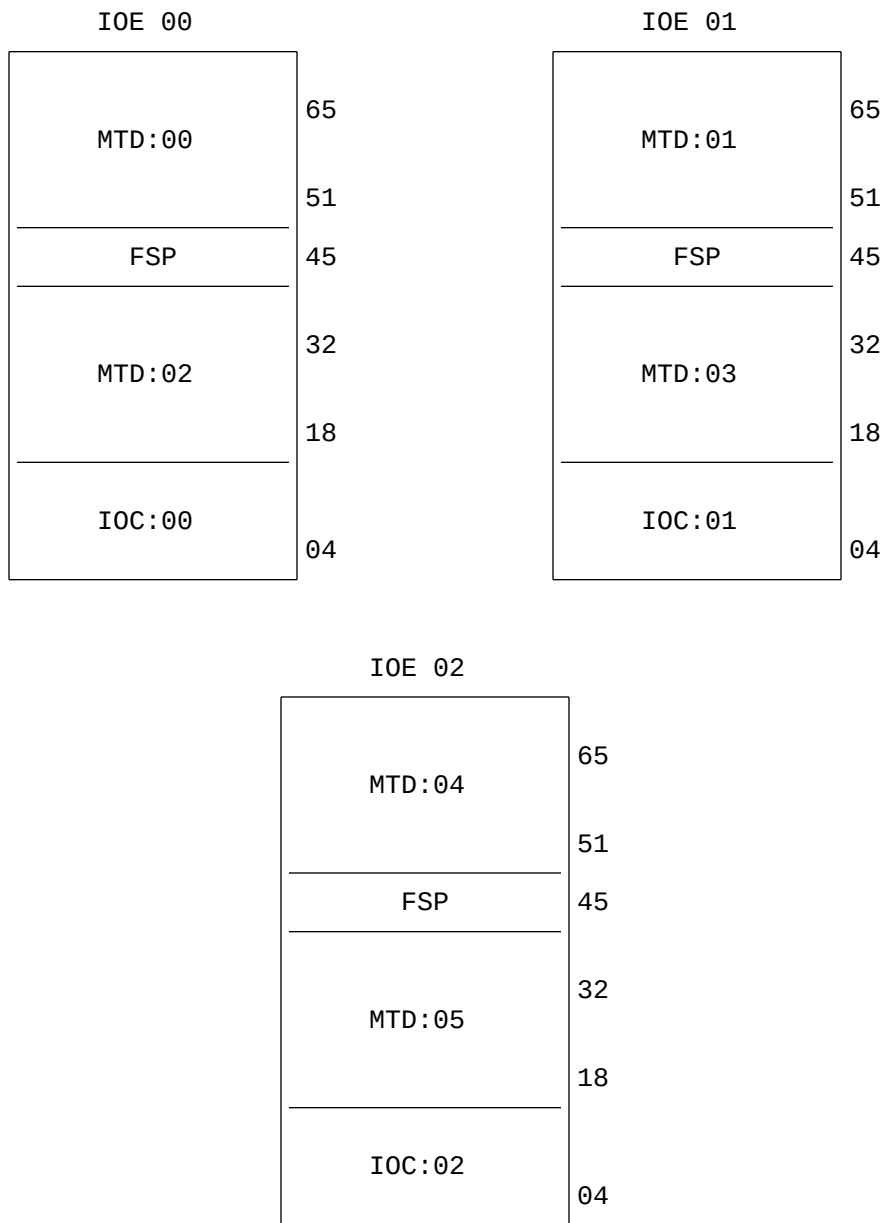
- 2) The 1st 5.25" DDU shall be located on the left side (slot 10) of the NT4X00AF Dual Disk Drive shelf (located in shelf Position 04). If a 2nd 5.25" DDU is required on the same shelf, it shall be located on the right side (slot 18).

- 3) With two 5.25" DDU's equipped, position 18 must be unequipped.

RUL8 1) Provide Interlock Wiring NT0X43WC for the NTZZ09MA Stratum II Shelf when assigned in position 04.

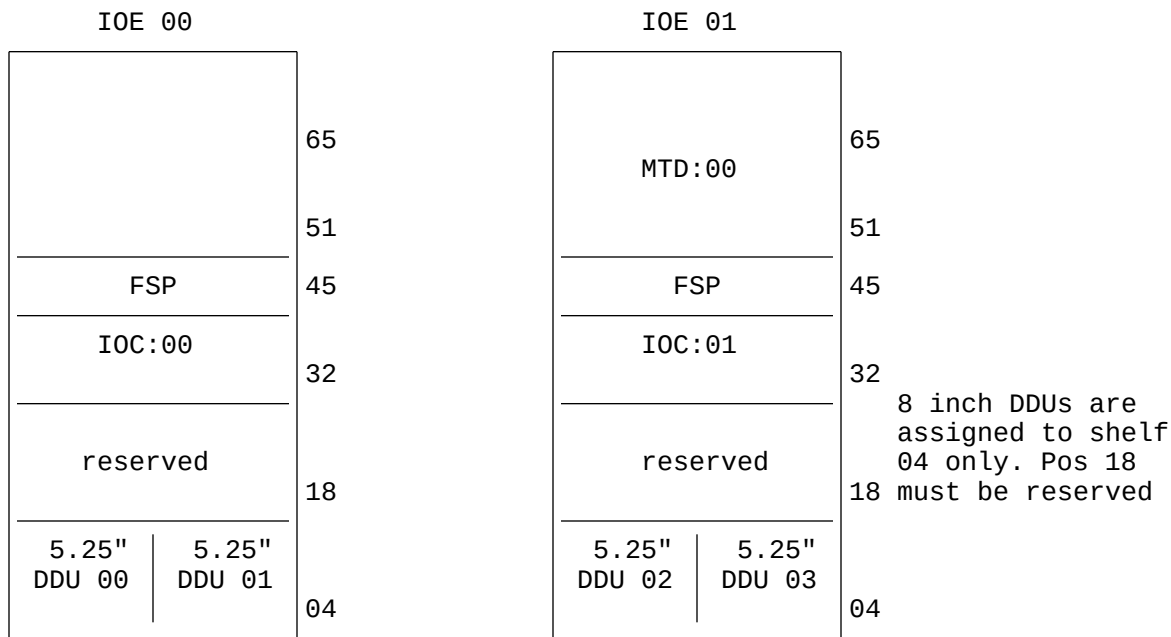
RUL9 1) Provide Interlock Wiring NT0X43WD for the NTZZ09MA Stratum II Shelf when assigned in position 32.

RUL10 1) Reserved for future use

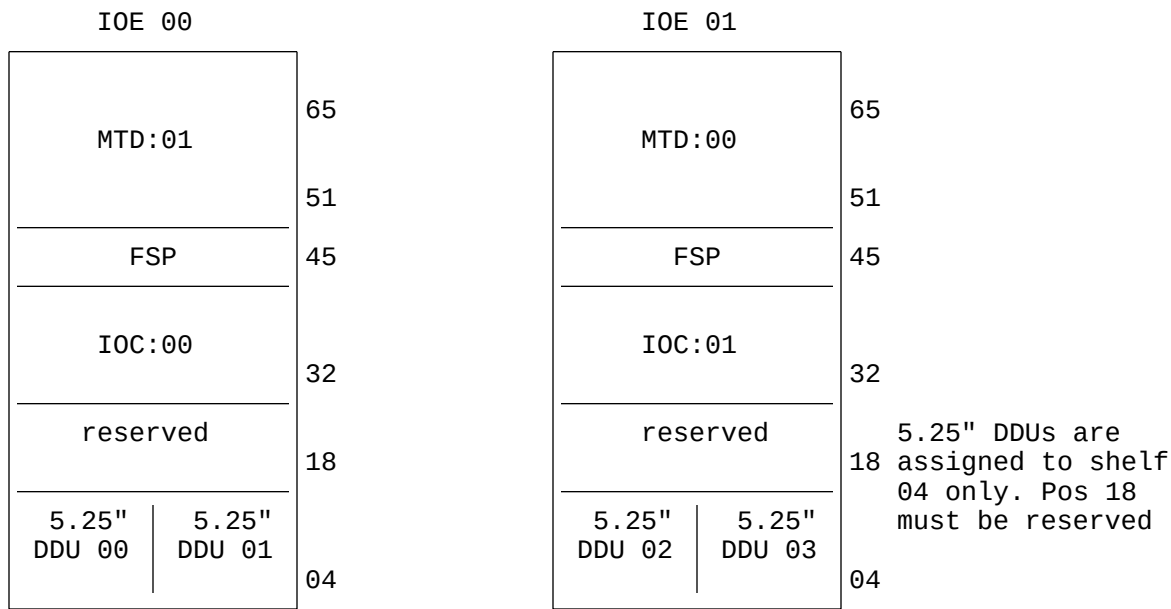


OFFICE WITH MTD'S ONLY

FIGURE 1

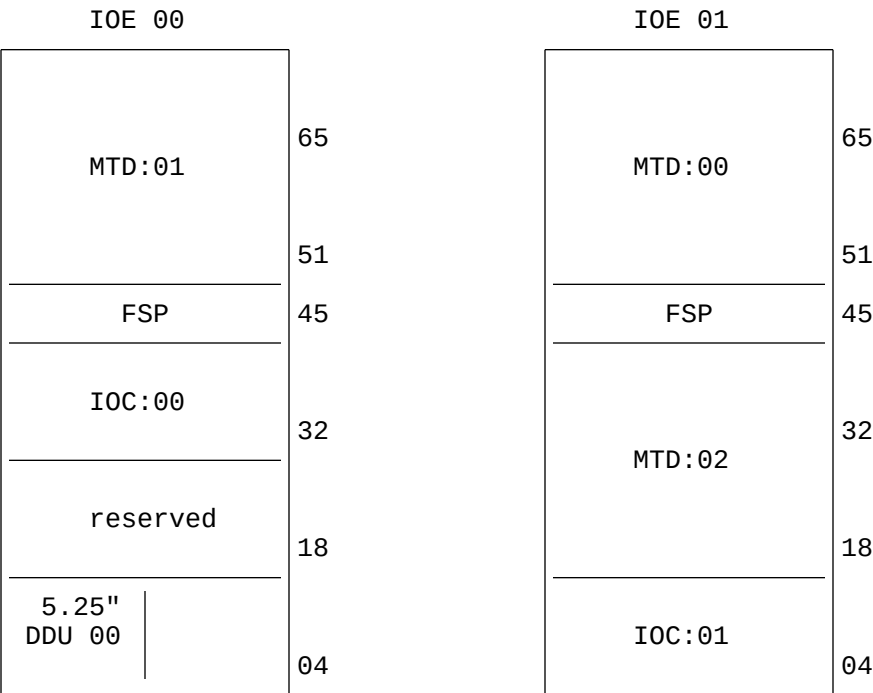


ONLY ONE MTD AND ONE OR MORE DDU'S
FIGURE 2



TWO (2) OR MORE MTD'S AND TWO (2) OR MORE DDU'S

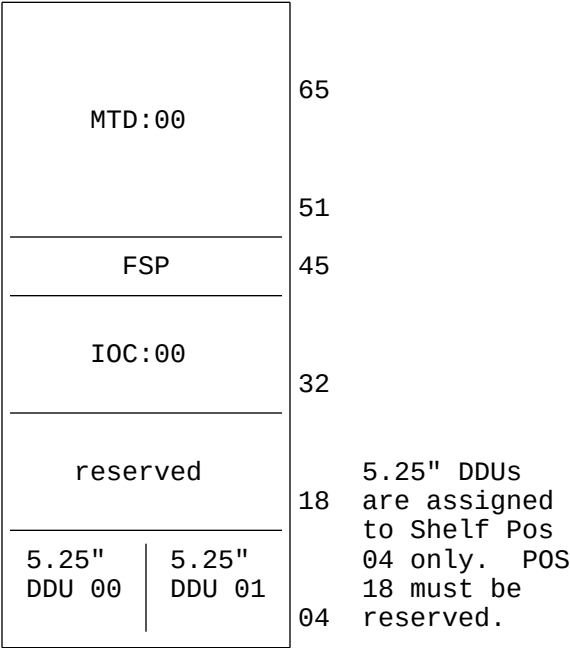
FIGURE 3



ONE (1) OR MORE MTD'S AND ONLY ONE (1) DDU

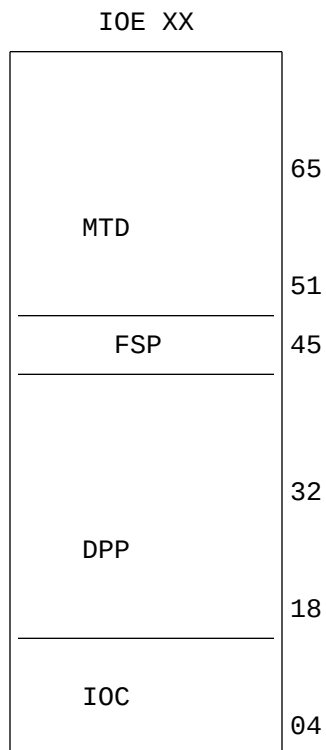
FIGURE 4

IOE 00



ONLY ONE (1) MTD AND TWO (2) DDU'S

FIGURE 5



DPP MOUNTING RESTRICTIONS

FIGURE 6

** NOTE - A NTZZ09LA DPP unit cannot be equipped in the same frame that has an NTZZ09BA, NTZZ09MA, or any equipment provisioned in shelf position 18 due to fusing limitations at the Frame Supervisory Panel

IOE FRAME
US ONLY

PEC CODE: NTZZ09TB

CPC CODE: B0236165

RATING: Manufactury Discontinued

REPLACES: Not applicable

REPLACED BY: NTZZ09AA

ABBREVIATION NAME: IOE

ENGINEERING DESCRIPTION: The IOE Frame houses the DMS input/output devices, mountable on a frame.

REFERENCE DOCUMENTATION: SLZZ09TB 00 01
NTZZ09TB REL 01

MARKETS: Applicable markets:

US

ISSUE AUTHOR: NTC: Samuel Zhou Dept. S646 (BRW)

MAIN CONTACT: NTC: Erica Keltner Dept. 3471 (RTP)

NTZZ09TB EMC5-01-IOE-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
92 11 09	ECM 613 08	Change power cable rules for ROS shelf (MS0X43AD)
92 12 11	ECM 202 08	The Following Changes Are Included: - Cook ECO #70509 DTD: 910307 Add NT8M04_L Series BMC - Cook ECO #70517 DTD: 910312 Add NT8M04_M Series BMC - Allow Provisioning Of Existing BMCs PEC NTZZ09TB.
92 12 14	ECM 613 10	Make NT0X36AB always provided to match the stocklist.
93 04 26	ECM 613 13	ET29183 - Clarify rules for the second NT0X36AB cards on the NT0X28AL FSP.
93 07 08	ECM 613 14	ET16819/16629 - Change RUL3.
93 10 27	ECM 613 16	EC 018-41170 - Introduce NTZZ09CB to replace NTZZ09CA. Update DPP cables in RUL3.
		ET 5819 - Added rules for IOC field installation.
93 12 20	ECM 613 18	EC 018-42007: Md NTZZ09MA/NA and replace them by NT3X95AB/BB.

The IOE Frame US Only is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
IOE Frame	NT0X43AD		1			AP
Mag Tape Drive Unit (Cook)	NT0X44AB	MTD		18, 51		RUL1
Frame Supervisory Panel	NT0X28AL	FSP	1	45		AP-01
Power Control & Alarm CP	NT0X36AB		1	45		AP
FSP Cover	P0673914			45		AP
Disk Drive Unit Shelf	NTZZ09BB	DDU		04		RUL7
# I/O Controller Module	NTZZ09CA	IOC		04, 18, 32		RUL2
I/O Controller Module	NTZZ09CB	IOC		04, 18, 32		RUL2
DPP Shelf 56Kbps	NTZZ09LA	DPP		18, 51		RUL3
DPP Shelf	NTZZ09XA	DPP		18, 51		RUL3
DPP Shelf Compression	NTZZ09YA	DPP		18, 51		RUL3
# DPP Control Cables	NT0X96DB			18, 51		RUL3
# DPP Control Cables	NT0X96DC			18, 51		RUL3
# DPP Control Cables	NT0X96DD			18, 51		RUL3
DPP Control Cables	NT0X96HD			18, 51		RUL3
DPP Control Cables	NT0X96HE			18, 51		RUL3
DPP Control Cables	NT0X96HF			18, 51		RUL3
# Stratum II Rmt Osc. Shelf	NTZZ09MA	ROS		04, 32		RUL4
Filler Panel	P0575239			04, 18, 32, 51, 65		RUL5
Power Cable	NT0X95BA			18, 32		RUL6
Power Cable	NT0X95BD			32		RUL6
Power Cable	NT0X95BF			18, 32		RUL6
Power Cable	NT0X95BG			18		RUL6
Power Cable	NT0X95BJ			04		RUL6
Power Cable	NT0X95BK			04		RUL6
Power Cable	NT0X95CE			32		RUL6
Power Cable	NT0X4301			04		RUL6
Power Cable	NT0X4302			04		RUL6
Wiring: Stratum II/2.5 DMS-Core	NT0X43WC					RUL8
Wiring: Stratum II/2.5 DMS-Core	NT0X43WD					RUL9

Retired Equipment
IOE Frame
US Only

NTZZ09TB
EMC5-01-IOE-2
Page 3

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Common Framework	NT0X25AA	FW	1			RUL10
Earthquake Framework	NT0X25AH	FW	1			RUL11
BMC Redund SMDR BSC Pseudo	NT8M04_A	BMCS		18,51		RUL12
BMC Redund LSSGR BSC Pseudo	NT8M04_C	BMCA		18,51		RUL12
BMC Redund LSSGR HDLC Lap B	NT8M04_D	BMCA		18,51		RUL12
BMC Redund LSSGR BX.25	NT8M04_E	BMCA		18,51		RUL12
BMC Redund LSSGR HDLC ADU	NT8M04_F	BMCA		18,51		RUL12
BMC Deuce e/w 72MB Disk Dr	NT8M04AG	BMCD		04,32, 51,65		RUL12
BMC Deuce e/w 140MB DDU	NT8M04BG	BMCD		04,32, 51,65		RUL12
BMC Redund NT HDLC ADU	NT8M04_J	BMCA		18,51		RUL12
BMC Deuce SMDR ASCII	NT8M04_L	BMCA		18,51		RUL12
Redundant BMC SMDR/NT ASCII	NT8M04_M	BMCA		18,51		RUL12

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTZZ09CA	STD*	NTZZ09CB
NT0X96DB	STD*	NT0X96HD
NT0X96DC	STD*	NT0X96HE
NT0X96DD	STD*	NT0X96HF
NTZZ09MA	MD	NT3X95AB

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

* Rate change pending. Check product availability.

NOTES:

Retired Equipment
IOE Frame
US Only

NTZZ09TB
EMC5-01-IOE-2
Page 4

- 1) The quantity of equipment that may be mounted in an IOE frame is limited by available shelf positions and by the number of connections available on FSP terminal block TB1. There are four types of TB1 connection to consider: -48V Fused at FSP, -48V Unfused, Battery Return, and Switched Power. The following table lists the requirements for each type of equipment. The sum of all connections for all equipment to be mounted must not exceed the 12 available connections on TB1.

Example: 1 NTZZ09BB = 6
 1 NTZZ09CB = 3
 1 NTZZ09LA or = 4
 --
 Total = 13 (this is not a valid IOE frame shelf combination)

Example 1 NTZZ09BB = 6
 1 NTZZ09CB = 3
 --
 Total = 9 (this is a valid IOE frame shelf combination)

EQUIPMENT	TB1 TOTAL AVAILABLE CONNECTIONS				
	FUSED 3	UNFUSED 2	BR 4	SW PWR 3	TOTAL 12
BMC	0	2	2	0	4
Dual DDU Shelf (NTZZ09BB)	2	0	2	2	6
DPP	0	2	2	0	4
IOC	1	0	1	1	3
Cook MTD	0	1	1	0	2
ROS	2	0	2	2	6

RULES:

- AP 1) When PEC NTZZ09TB is ordered, these items are provided.
- 2) One additional NT0X36AB Power Control and Alarm card is always provided when NTZZ09AA is ordered. This NT0X36AB card

serves an IOC in shelf position 18, an ROS in shelf position 04 or 32, an DDU in shelf position 18, or a DPP in shelf position 18 or 51 (refer to RULE AP-01 (2)).

AP-01 1) This PEC is always provided to the NT0X43AD and is shown here for completeness.

2) Each NT0X28AL, FSP, comes equipped with one NT0X36AB, Power Control and Alarm card, which serves IOC or DDU shelves in positions 32 and 04.

RUL1 1) The standard DMS MTD is the Cook Electric drive, NT0X44AB.

2) For an office which will have MTD's only, Magnetic Tape Drive Units are provisioned as follows:

a) A minimum of two (2) is required per system, one for maintenance and one for back-up or image/spare.

b) An additional two (2) may be required for LAMA/CAMA or Distributed Processor Peripheral (DPP).

c) An extra MTD may be provided for separate Operational Measurement (OM) support.

d) Maximum of ten (10) MTD per system.

3) In a disk office one MTD is retained primarily to enable physical transportation of data to and from the office and secondarily as a back up to the DDU.

4) The first MTD on an IOE frame must mount on position 51.

5) See figures one (1) through nine (9) for various frame configurations of MTD's.

RUL2 1) A minimum of two I/O Controller Modules (IOC:00, IOC:01) is required per system. Provide two (2) NTZZ09CB. The IOC NTZZ09CB replaces NTZZ09CA.

2) Each shelf accommodates up to nine I/O device controller cards.

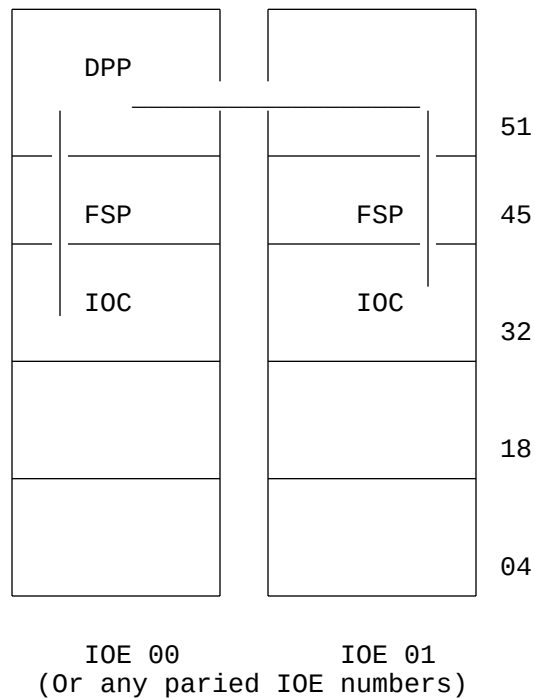
3) Provide one (1) NTZZ09CB I/O Controller Module for each additional nine I/O Device Controller Cards to be accommodated. Number these shelves IOC:02 and up.

4) Refer to EMB14-02-000 for IOC circuit pack assignments.

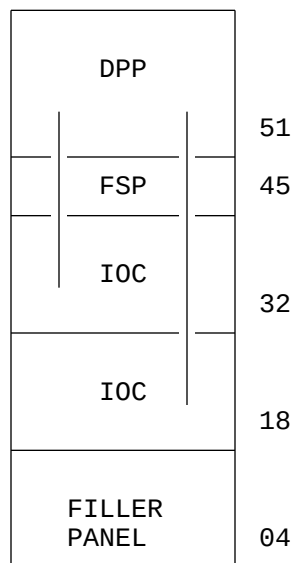
- 5) See figures one (1) through nine (9) for various frame configurations of IOC's.
- 6) The IOC shelf and the devices (MTD, DDU, MAP etc.) it interfaces should be cabled to the same power feed on the Power Distribution Center (PDC).
- 7) When ordering this shelf for field installation, order 5 metres of NT-26CR (R0109836) wire coloured green.

- RUL3
- 1) Provide the Distributed Processor Peripheral (DPP) for remote polling of Automatic Message Accounting (AMA) in the DMS-100F.
 - 2) Provide one (1) NTZZ09LA if the 56Kbps options is selected, one (1) NTZZ09YA if the Compression option is selected, otherwise, provide one (1) NTZZ09XA for remote polling of AMA information. Refer to each DPP Building Block Engineering Manual Insert for provisioning of the disk sizes and associated I/F CPs. Refer to ECM 306 for the record capacity information to determine disk size.
 - 3) When a DPP is mounted in an IOE frame, the following restrictions should apply:
 - a) A DPP unit should be mounted on shelf position 51 on initial order.
 - b) A Cook MTD and a DPP/BMC should not be mounted in the same frame.
 - c) An HP MTD and a DPP/BMC can be mounted in the same frame. In this case, the HP MTD should be mounted on shelf position 51, and the DPP/BMC should be mounted on shelf position 18.
 - d) DPP chassis "A" and chassis "B" should be connected to different power feeds. The two controller CP's for chassis "A" should reside in an IOC which has the same power feed as chassis "A". The two controller CP's for chassis "B" should reside in an IOC which has the same power feed as chassis "B". The two IOC's should be power interlocked. These restrictions are demonstrated by the following three configurations shown in item 4), 5) and 6).
 - 4) When a DPP unit and its controllers are configured to reside in mating paired IOE frames, the following rules should apply:

- a) The two IOE frames must have different power feeds and are power interlocked.
- b) The IOC units can be mounted on shelf position 04, 18 or 32 (refer to the following figure).
- c) Note that this is a standalone system and is independent of other IOE locations.

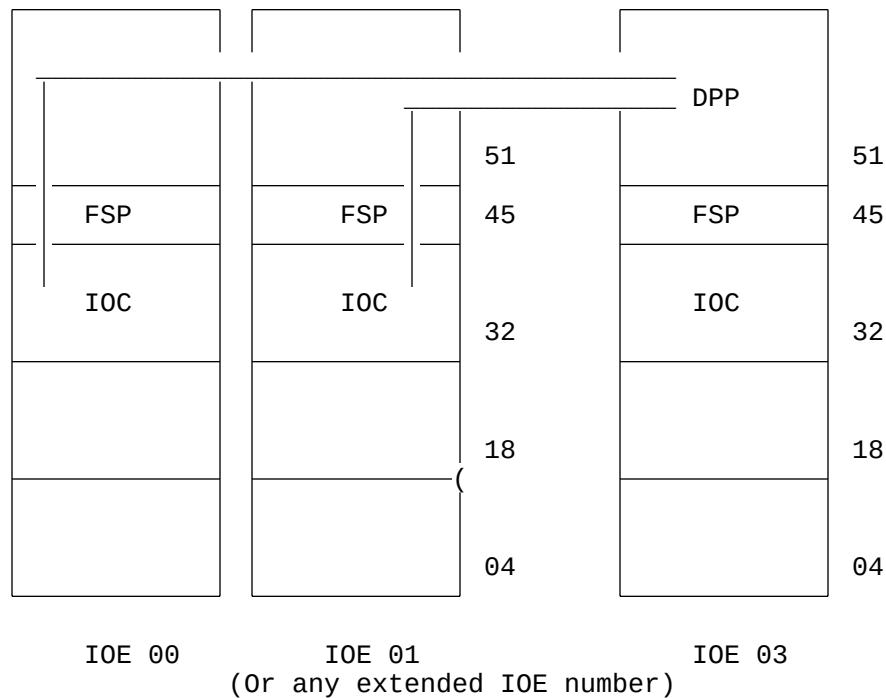


- 5) When a DPP and its controllers are configured to reside in the same IOE frame, the following rules should apply:
 - a) The two IOC units must have different power feeds and are power interlocked.
 - b) Shelf 04 should not be used because of FSP limitation. Provide a filler panel on shelf 04 (refer to the following figure).
 - c) This is a standalone system and is independent of other IOE locations. This configuration is used only when single IOE extension is required and must be converted to the configuration as specified in RULE 3(4).



IOE 03
(Or any extended IOE number)

- 6) When a DPP and its controllers are configured to reside in separate frames, the following rules should apply:
- IOE 03 must be in the same line-up as the other mating paired IOE 00 and 01 where the DPP controller reside (refer to the following figure). Cable length limitations shall apply.
 - The two IOC units where the DPP controllers reside must have different power feeds and are power interlocked.
 - If IOC is not required in IOE 03 frame, a ROS unit or a Dual DDU unit can be mounted on shelf 04.
 - If space is not available on the IOC units in IOE 00 and 01 for the DPP controllers, the circuit packs which do not require power interlock must be moved to the IOC in IOE 03. If none of the circuit packs can be moved, this configuration should not be used.
 - This configuration should be used upon telco request only.



(7) a) When a DPP module (NTZZ09LA/XA/YA) is controlled by an NTZZ09CA IOC, provide two (2) NT0X96DB (read), two (2) NT0X96DC (write) and two (2) NT0X96DD (control) control cables. Job engineered not to exceed 25 feet of length. Refer to CA0X15 for job engineering information.

b) When a DPP module (NTZZ09LA/XA/YA) is controlled by an NTZZ09CB IOC, provide two (2) NT0X96HD (read), two (2) NT0X96HE (write) and two (2) NT0X96HF (control) control cables. Job engineered not to exceed 25 feet of length. Refer to CA0X15 for job engineering information.

- RUL4
- 1) Provide one (1) NTZZ09MA Stratum II Oscillator Shelf when Stratum II feature is required.
 - 2) The NTZZ09MA Shelf requires two -48V feeds and two sets of alarm and control signals from the FSP.
 - 3) The following rules apply to Stratum Shelf configurations:
 - a) There must be two available shelf positions in the IOE frame.

- b) The IOE frame must be located within 200 feet of the CMC's or SuperNode cabinet.
 - c) The Stratum shelf must be powered from the same PDC as the CMC shelf or SuperNode cabinet.
 - 4) The NTZZ09MA has two backplanes mounted on the same shelf. Backplane "A" is located at slot positions 1 through 14 and backplane "B" is located at slot positions 15 through 27. There is a power converter located at slot 6 for backplane "A" and at position 20 for backplane "B".
- RUL5 1) Provide fourteen inch (355.6 millimeters) filler panels in positions not equipped.
- RUL6 1) Depending on position of IOC (NTZZ09CB) and NTZZ09MA shelf power cables will be ordered as follows:
- a)
 - i) IOC position 04 NT0X95BK & NT0X95BJ
 - ii) IOC position 32 NT0X95BA & NT0X95BD
 - iii) IOC position 18 NT0X95BF & NT0X95BG
 - b)
 - i) ROS position 04 NT0X4301 & NT0X4302 for "A" back-plane
 - ii) ROS position 04 NT0X95BJ & NT0X95BK for "B" back-plane
 - iii) ROS position 32 NT0X95BF & NT0X95CE for "A" back-plane
 - iv) ROS position 32 NT0X95BA & NT0X95BD for "B" back-plane
- RUL7 1) The NTZZ09BB is to be mounted in IOE shelf position 04 only.
- 2) The 1st 5.25" DDU shall be located on the left side (slot 10) of the NT4X00AF Dual Disk Drive shelf (located in shelf Position 04). If a 2nd 5.25" DDU is required on the same shelf, it shall be located on the right side (slot 18).
- 3) With two 5.25" DDU's equipped, position 18 must be unequipped.
- RUL8 1) Provide Interlock Wiring NT0X43WC for the NTZZ09MA Stratum II Shelf when assigned in position 04.
- RUL9 1) Provide Interlock Wiring NT0X43WD for the NTZZ09MA Stratum II Shelf when assigned in position 32.
- RUL10 1) Provide one common framework for each IOE frame in offices not requiring earthquake protection.

RUL11 1) Provide one earthquake framework for each IOE frame in offices requiring earthquake protection.

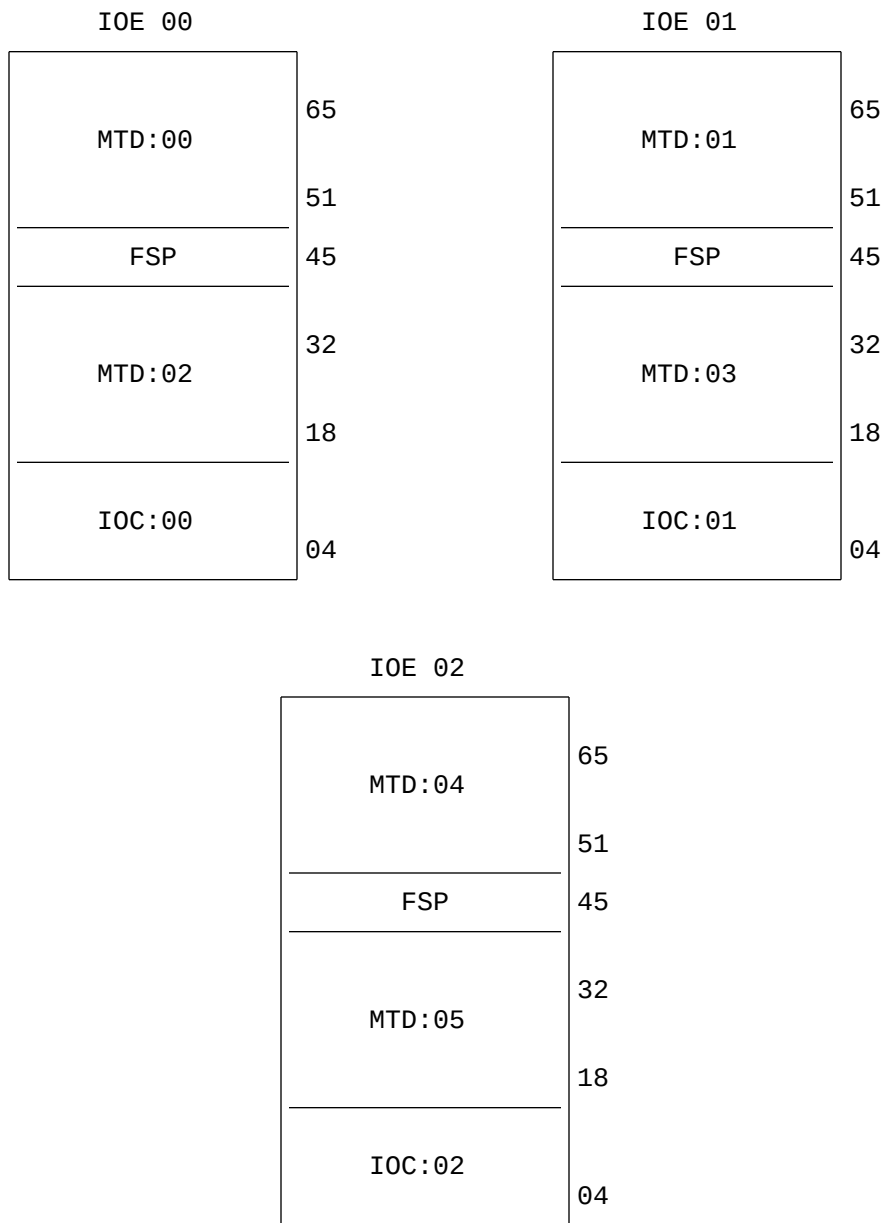
RUL12 1) Several configurations of the NSD Billing Media Converter (BMC) are available. The variables used in these configurations are the System Feature Group Protocols and Hard Disk technology. The variations are detailed in separate Engineering Manual sections as follows:

- a) NT8M04_A: For BMC Redund SMDR BSC Pseudo, See Section EMA5-01-BMCS-1 and ECM 202
- b) NT8M04_C: For BMC Redund LSSGR BSC Pseudo, See Section EMA5-01-BMCA-1 and ECM 202
- c) NT8M04_D: For BMC Redund LSSGR HDLC Lap B, See Section EMA5-01-BMCA-2 and ECM 202
- d) NT8M04_E: For BMC Redund LSSGR BX.25, See Section EMA5-01-BMCA-4 and ECM 202
- e) NT8M04_F: For BMC Redund LSSGR HDLC ADU, See Section EMA5-01-BMCA-3 and ECM 202
- f) NT8M04_G: For BMC dual user Simplex SMDR Bisync, See Section EMA5-01-BMCD-1 and ECM 202
- g) NT8M04_J: For BMC Redund NT HDLC ADU, See Section EMA5-01-BMCA-5 and ECM 202
- h) NT8M04_L: For BMC dual user Simplex SMDR ASCII, See Section EMA5-01-BMCD-2 and ECM 202 Issue 8 & Later
- i) NT8M04_M: For BMC Redund SMDR ASCII Pseudo, See Section EMA5-01-BMCS-2 and ECM 202 Issue 8 & Later

NOTE: The underscore in the above PECs in the seventh character position are used as a variable in lieu of the actual character which indicates the disk drive size. Refer to the referenced Engineering Manual section for details.

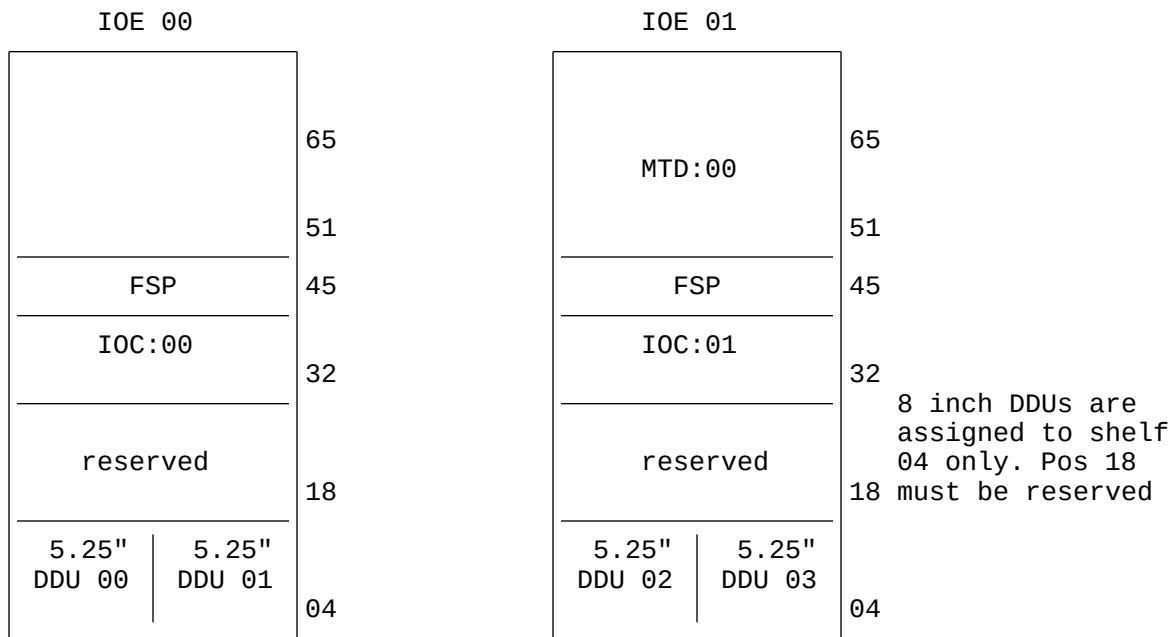
- 2) Provide one dual shelf (Redundant) BMC for remote polling of Automatic Message Accounting (AMA) or Station Message Detail Recording (SMDR) data records, for one Customer Group. See Figure 9 for a typical frame layout.

- 3) The Magnetic Tape Control Cables NT0X96AA (read), NT0X96AB (write), and NT0X96AC (control) are MD'd and replaced by NT0X96DB, NT0X96DC, and NT0X96DD respectively. Provide one of each of these cables when NT8M04_ Billing Media Converter (BMC) is equipped.
- 4) Provide one single shelf (Simplex) BMC Deuce (BMCD) for remote polling of Station Message Detail Recording (SMDR) data records only, for two Customer Groups. Note this is a non-redundant single shelf configuration. See Figure 10 for a typical equipment frame layout.

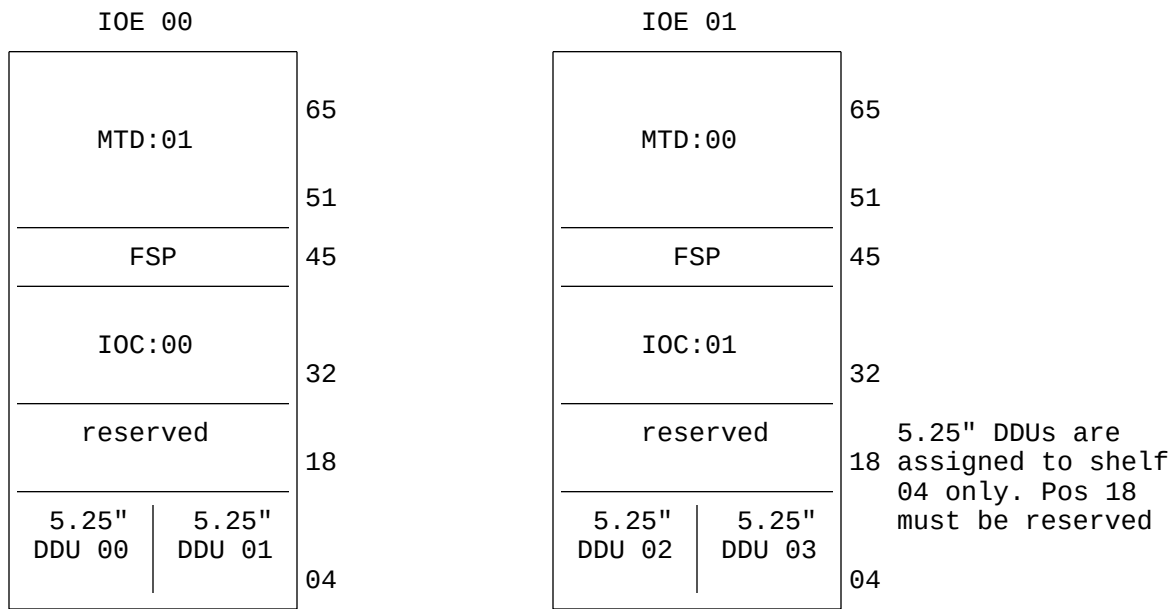


OFFICE WITH MTD'S ONLY

FIGURE 1

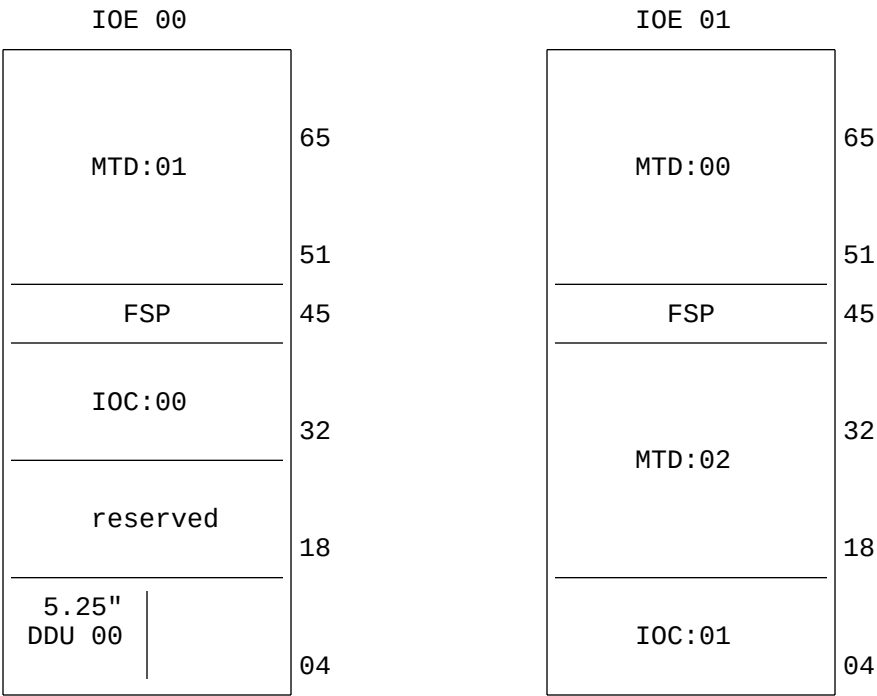


ONLY ONE MTD AND ONE OR MORE DDU'S
FIGURE 2



TWO (2) OR MORE MTD'S AND TWO (2) OR MORE DDU'S

FIGURE 3



ONE (1) OR MORE MTD'S AND ONLY ONE (1) DDU

FIGURE 4

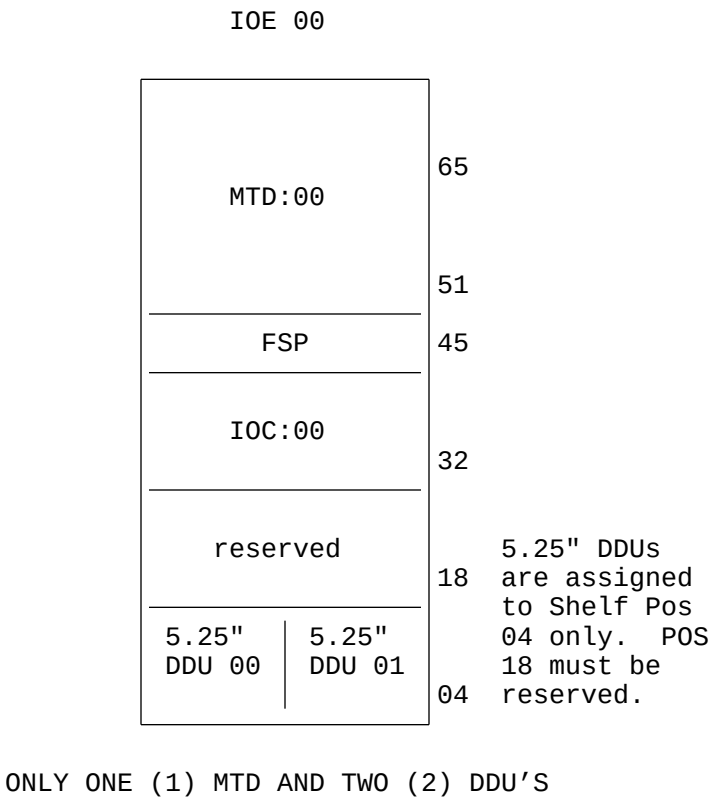
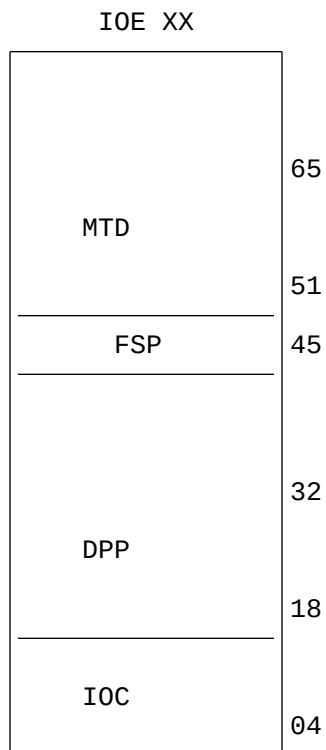


FIGURE 5



DPP MOUNTING RESTRICTIONS

FIGURE 6

** NOTE - An NTZZ09LA, NTZZ09XA, or NTZZ09YA DPP unit cannot be equipped in the same frame that has an NTZZ09BB, NTZZ09MA, or any equipment provisioned in shelf position 18 due to fusing limitations at the Frame Supervisory Panel

CABINETIZED INPUT/OUTPUT
EQUIPMENT MODEL B

PEC CODE: NTZZ47EB

CPC CODE: B0240384

| RATING: MD.

REPLACES: NTZZ47EA

| REPLACED BY: NTZZ47EC

ABBREVIATION NAME: CIOE

ENGINEERING DESCRIPTION: The Cabinetized Input/Output Equipment Model B houses all the input/output devices, mountable on a frame, that interface the MAP with the DMS machines.

REFERENCE DOCUMENTATION: SLZZ47EB 00 01
NTZZ47EB REL 01
MSRX33DA 01 03
MSRX25AA 00 02

MARKETS: Applicable markets:

US
Europe
Asia/Pacific
CALA

ISSUE AUTHOR: NTI: Erica Keltner Dept. 3471 (PPK)

MAIN CONTACT: NTI: Erica Keltner Dept. 3471 (PPK)

NTZZ47EB EMC5-01-IOE-3 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 03 11	ECM 683 03	Introduce NTZZ47EB to replace NTZZ47EA
94 04 18	ECM 613 19	EC 018-41413 Introduces the NT1X61AG shelf into NTRX33DA and MD's NT1X61AD. As result, NTZZ32EM and NTRX33EH are replaced by NTZZ32EN & NTRX33FH resp.
94 04 28	ECM 613 20	ET 18909- Show NTRX33DY and NTRX33DZ as provisional to NTZZ47EB.
94 06 03	ECM 613 21	ET 113460- Add NT0X44BB and NTZZ32LA as provisional to NTZZ47EB to support International market.
94 07 22	ECM 561 01	EC 018-42674 Introduces SCSI-DDU that replaces existing DDU and Controller CP. Therefore, show NTZZ32FM as rate change pending.
94 11 21	ECM 613 25	EC 024-93121 MD this BB and replace it with NTZZ47EC since the FMU and Cooling Unit kit are put into the stocklist.

The Cabinetized Input/Output Equipment Model B is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Cabinetized I/O Equipment	NTRX33DA		1			AP
Modular Supervisory Panel Kit	NTRX3373	MSP	1	61		AP
Modular Supervisory Panel	NTRX40AA		1	61		AP-02
Talk Battery Filter Module	NTRX44AA		2	61	1-2, 3-4	AP-02
Alarm Module	NTRX41AA		1	61	5-6	AP-02
Thermal Breaker Module	NTRX43AA		1	61	7	AP-02
Breaker Module (10A)	NTRX42AA		3	61	8, 9, 10	AP-02
Blank Rear Panel 1.20"	P0734476		3	61	11, 18, 18R	AP-02
Blank Rear Panel 4.80"	P0734474		2	61	12-15, 12R-15R	AP-02
Blank Rear Panel 2.40"	P0734475		2	61	16-17, 16R-17R	AP-02
Terminal Block (6X3)	P0737547		2	61	2R, 11R	AP-02
Terminal Block (4X4)	P0737326		1	61	4R	AP-02
Magnetic Tape Drive Assembly	NTZZ32BM	MTD	1	33		RUL1
Mag Tape Drive Int. Market	NTZZ32LA	MTD	1	33		RUL1
Magnetic Tape Drive Hardware	NT0X44AD		1	33		RUL1
Magnetic Tape Drive Assembly	A0277744	MTD	1	33		RUL1
Magnetic Tape Drive Assembly	A0326502	MTD	1	33		RUL1
Power Cable Assembly	NTRX33MC		1	33		RUL1
Filler Panel 3 Inch	P0654622		1	57		RUL1
Screw	P097F813		4	57		RUL1
Washer	P0284154		1	57		RUL1
Lock washer	P0183220		1	57		RUL1
Cover Plate	P0734475		2	61	19	RUL1
Screw	P0559409		8	61	19R	RUL1
10" Cooling Unit Kit	NTRX92AA		1	00		RUL1
Fan Management Unit	NTRX54BA	FMU	1	61	19	RUL1
Design. Label (NTRX54BA)	P0741680		1	61	19	RUL1
Fuse Design Label	P0741924		1	61		RUL1
Fuse Design Label MSP	P0746676		1	61		RUL1
380 MByte DPP Assembly	NTZZ32PM	DPP	1	33		RUL2
140 MByte DPP Assembly	NTZZ32NA	DPP	1	33		RUL2
380 MByte DPP w/56K	NTZZ09RA	DPP	1	33		RUL2
760 MByte DPP w/56K	NTZZ09SA	DPP	1	33		RUL2
380 MByte DPP w/56K/Compr.	NTZZ32PA	DPP	1	33		RUL2
760 MByte DPP w/56K/Compr.	NTZZ32DM	DPP	1	33		RUL2
140 MByte DPP w/56K/Compr.	NTZZ32NM	DPP	1	33		RUL2
DPP Mounting Hdwr CIOE B	NTZZ32QA		1	47		RUL2

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
# I/O Controller Module Pkg.	NTZZ32EM	IOC	2	19		RUL3
# IOC/Bulkhead Cable	NTRX33EH		8	19		RUL3
I/O Controller Module Pkg.	NTZZ32EN	IOC	2	19		RUL3
IOC/Bulkhead Cable	NTRX33FH		8	19		RUL3
Even CIOE, IOC Power Feed	NTRX33WC		1			RUL3
Odd CIOE, IOC Power Feed	NTRX33WD		1			RUL3
Stratum II Rmt Osc. Shelf (DMS-Core, ISG) -48V	NTZZ32HM	ROS	1	05		RUL4
Stratum 2.5 Rmt Osc Shelf (DMS-Core, ISG)	NTZZ32JM	ROS	1	05		RUL4
# Disk Drive Unit Shelf	NTZZ32FM	DDU	1	05		RUL5
Power & Control Cassy	NTRX33MD		1	05		RUL6
Power & Control Cassy	NTRX33ME		1	05		RUL6
Power & Control Cassy	NTRX33MF		1	33		RUL6
Power & Control Cassy	NTRX33MG		1	33		RUL6
Filler Panel	NT0X84AA		1	05		RUL7
Filler Panel	P0575239		2	33, 47		RUL7
Personality Plate (Blank)	P0715616		1	47		RUL7
Personality Plate (Blank)	P0726351		1	05		RUL7
CIOE Horizontal Cabling Kit	NTRX33DY		1			RUL8
CIOE Ext. Power Filter Kit	NTRX33DZ		1			RUL8
CDSN English Label Kit	NTRX3541		1			RUL9
Wiring Instructions	LWJRX33DA		1			RUL10
Frame/Logic Gnd Cluster Kit	NTRX2520		1			AP-01
C28 Cabinet Mechanicals	NTRX25AA					NOTE1
Cabinet Power and Grounding	NTZX16CA					NOTE2
CIOE Door and eqp labels	MS0X60AA					NOTE3

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTZZ32EM NTRX33EH NTZZ32FM	MD MD STD*	NTZZ32EN NTRX33FH NT1X55FA

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

* Rate change pending. Check product availability.

NOTES:

- 1) The NTZZ47EB has system level provisionable items covering the following:

- * Seismic Zone provisioning
- * Grounding options provisioning
- * Cable routing options provisioning
- * Cabinet Fail Lamp provisioning
- * Cabinet door provisioning

For details of the above refer to Engineering Manual Section NTRX25AA, C28 Cabinet Mechanical Assembly.

- 2) For power and grounding information refer to Engineering Manual Section for NTZX16CA Cabinetized Power and Grounding.
- 3) Refer to MS0X60AA for CIOE door label and equipment labeling.

RULES:

- AP 1) When PEC NTZZ47EB is ordered, these items are provided.
- AP-01 1) This item is always provided with NTRX33DA and is shown here for completeness.
- AP-02 1) These items are always provided with NTRX3373 and are shown here for completeness.
- RUL1 1) If MTD is required, provide one (1) NTZZ32BM MTD Assembly (- 48V) for Domestic market, or one (1) NTZZ32LA MTD Assembly for International markets.
- 2) An MTD mounted in position 33 occupies mounting position 47 also.
- 3) For Domestic market, provide one each (1) NT0X44AD, A0277744, P0654622, P0284154, P0183220, NTRX92AA, NTRX54BA, P0741680, NTRX33MC, P0741924, and four (4) P097F813, in place of NTZZ32BM if drive is to be drop shipped to site.
- 4) For International market, provide one each (1) NT0X44AD, A0326502, P0654622, P0284154, P0183220, NTRX92AA, NTRX54BA, P0741680, NTRX33MC, P0741924, and four (4) P097F813 in place of NTZZ32LA if drive is to be drop shipped to site.
- 5) If the Mag Tape Drive is not provided, provide two P0734475 cover plates and eight P0559409 screws in shelf position 61 slot 19 in place of the Fan Management Unit provided with the Mag Tape Drive Building Blocks. Also, provide one P0746676 Fuse Design label.
- 6) With vertical powering, the MTD and its controller card must reside in the same or adjacent cabinet.
- 7) MTD requires the same power feed as the IOC in the cabinet.
- 8) Refer to the Mag Tape Drive Engineering Manual Sections for more information.
- RUL2 1) The Distributed Processor Peripheral (DPP) allows remote polling of Automatic Message Accounting (AMA) in the DMS-100F.
- 2) The DPP Disk Drive Units are provisionable under the Product Engineering Codes (PEC) NTZZ32PM, NTZZ32DM, NTZZ32NA, NTZZ09RA, NTZZ09SA, NTZZ32PA, NTZZ32NM, and NTZZ32QA. Ini-

tial offices will provide NTZZ32QA, DPP mounting hardware, and one of the above DPP PECs per office requirements.

- 3) The following is a list of the DPP PECs with a description of the contents:

NTZZ32PM-Provides a DPP with 2 380 Mbyte disk drives.
NTZZ32NA-Provides DPP with 2 140 Mbyte disk drives.
NTZZ09RA-Provides DPP with 2 380 Mbyte disk drives and 56 K pollin
NTZZ09SA-Provides DPP w/2 760 Mbyte disk drives and 56 K polling.
NTZZ32PA-Provides DPP w/2 380 Mbyte disks and 56K/Compression poll
NTZZ32DM-Provides DPP w/2 760 Mbyte disks and 56K/Compression poll
NTZZ32NM-Provides DPP w/2 140 Mbyte disks and 56K/Compression poll
NTZZ32QA-Provides the hardware and cables to mount the DPP unit on the CIOE Model b.

- 4) A DPP mounted in position 33 occupies mounting position 47 also.
- 5) Each of the two DPP chassis requires one tape controller card (NT1X68) and one port on a terminal controller (NT1X67). These ports should be on different IOCs. With vertical powering, the DPP and one of its controller cards must reside in the same cabinet and the second controller card in the adjacent cabinet.
- 6) Connect DPP chassis A and chassis B to CPDC power feed A and B, respectively.
- 7) Refer to the DPP Engineering Manual Sections for more information.

- RUL3 1) A minimum of two I/O Controller Modules (IOC:00, IOC:01) are required per system.
- 2) If provisioned as independent shelves then provide two (2) NTZZ32EN in shelf position 19 of each frame. Number these shelves IOC:00 and IOC:01.
- 3) Each shelf accommodates up to nine I/O device controller cards.
- 4) Provide one (1) NTZZ32EN I/O Controller Module Package for each additional nine I/O Device Controller Cards to be accommodated. Number these shelves IOC:02 and up.

- 5) The IOC shelf and the devices (MTD, DDU, etc.) it interfaces should be cabled to the same power feed on the Cabinetized Power Distribution Center (CPDC).
- 6) MTD, DPP, or DDU controller cards can be assigned to only slot 4 or slot 6 of the IOC shelf in the CIOE. The cables from these slots to the bulkhead are not normally provided since the MTD/DDU/DPP are cabled directly to the IOC. The MTD, DPP or DDU connected to these slots must be inside the same Faraday cage of the CIOE or the adjacent CIOE. If slots 4 and/or 6 are not occupied by MTD, DDU, or DPP controller cards, other controller cards may be used in these slots. If other controller cards are used, provide 4 NTRX33FH IOC/Bulkhead cables (4 per cp) for a maximum of 8 cables for 2 slots.

Connect NTRX33FH as indicated in the table below:

FROM					TO	
CABLES	QTY	SHELF	SHELF POS	CONN	BULKHEAD POSITION	CONN
NTRX33FH		IOC	19	C04-C11	19	C04-C11

- 7) Provide one (1) NTRX33WC wiring when the IOC is provisioned in an even CIOE cabinet (feed A).
 - 8) Provide one (1) NTRX33WD wiring when the IOC is provisioned in an odd CIOE cabinet (feed B).
 - 9) Refer to the I/O Controller Module Engineering Manual Section for more information.
- RUL4
- 1) Provide one (1) NTZZ32HM Stratum II Oscillator Shelf (remote shelf) on shelf position 5 when Stratum II feature is required in a DMS-Core ISG office. The NTZZ32HM is required in markets where -48V power is required.
 - 2) Provide one (1) NTZZ32JM Stratum 2.5 Oscillator Shelf (remote shelf) in shelf position 5 when Stratum 2.5 feature is required.
 - 3) If Stratum II Remote Oscillator Shelf is provided, the following rules apply:

- a) The CIOE cabinet must be adjacent to the SuperNode cabinet.
- b) The ROS shelf must be powered from the same CPDC as the SuperNode cabinet.
- 4) If the Stratum 2.5 ROS is provided, the CIOE must be located within 200 feet of the DMS-Core Message Switch Shelf.
- 5) The Remote Oscillator Shelf has two backplanes mounted on the same shelf. Backplane "A" is located at slot positions 1 through 14 and backplane "B" is located at slot positions 15 through 27. There is a power converter located at slot position 6 for backplane "A" and at slot position 20 for backplane "B".
- 6) When ordering this shelf for field installation, provision 5 metres of NT-26CR (R0109836) wire coloured green.
- 7) Refer to the Stratum Engineering Manual Sections for more information.

RUL5

- 1) The NTZZ32FM DDU shelf is to be mounted in CIOE shelf position 05 only.
- 2) Provide a minimum of one (1) maximum of two (2) NTZZ09UA 228MB Disk Drive Units per NTZZ32FM shelf.
- 3) The 1st DDU shall be located on the left side (slot 10) of the NT4X00AF Dual Disk Drive shelf. If a 2nd DDU is required on the same shelf, it shall be located on the right side (slot 18).
- 4) The NT1X55DA disk drive controller must be provisioned with the NT4X00AF (two controllers per shelf). If there are two DDUs, one controller (NT1X55) shall mount on IOC 0 and the other on IOC 1. With vertical powering, the DDU and its controller card must reside in the same or adjacent cabinets.
- 5) In a disk office the Disk Drive Unit Shelf (DDU) replaces the MTD as the office primary mass storage system.
- 6) Refer to the DDU Engineering Manual Section for more information.
- 7) The NTZZ32FM and its Controller CP NT1X55DA are replaced by the SCSI Disk Drive Unit (SCSI-DDU) NT1X55FA which is a circuit pack mounted on the IOC shelf in any of the follow-

ing nine (9) slot positions: 4, 6, 8, 10, 12, 14, 16, 18 and 20. Refer to TABLE B or T_IOC_BB_CP for provisioning of the SCSI DDU.

For initial jobs, provide the SCSI-DDU NT1X55FA when GA, as the DDU shelf on the CIOE cabinet is no longer provisioned. Refer to SCSI-DDU ECM for software restrictions. For field upgrades, remove the NT1X55DA and neighboring NT0X50AA filler face plate to mount the double size faceplate NT1X55FA circuit pack. The NT1X55FA mounts in the same slot as the NT1X55DA Controller CP. The cables connected to the associated ESDI-DDU and the DDU shelf should also be removed.

- RUL6
- 1) Provide one (1) NTRX33MD and one (1) NTRX33ME Power & Control cable assemblies to connect the DDU or Stratum in shelf position 05 to the Modular Supervisory Panel (MSP). However, if DPP is being provisioned at the same time, do not provide NTRX33MD or NTRX33ME. Use NTRX33MF and NTRX33MG Power & Control cable assemblies provided via the DPP Mounting Hardware Building block to connect the DPP and DDU or Stratum to the MSP.
 - 2) If an existing office has a DDU or Stratum in shelf position 05 and a DPP is to be provided in the CIOE in shelf position 33, the existing NTRX33MD and NTRX33ME cables need to be removed and replaced by NTRX33MF and NTRX33MG.

- 3) The cables provided herein shall be connected as indicated in the table below:

FROM					TO	
CABLES	QTY	SHELF	SHELF POS	CONN	BULKHEAD POSITION	CONN
NTRX33MD	1	DDU 00 OR STRM-00	05	SCR	MSP (61)	J1/61-08
NTRX33ME		DDU 01 OR STRM-01				J1/61-09
NTRX33MF	1	DPP CH/A & STR-00 OR DDU_00	33	J16		A J16
				J15		J1/61-08
				SCR		B J14
NTRX33MG	1	DPP CH/B & STR-01 OR DDU_01		J15, J16		J1/61-09
				SCR		

- RUL7 1) Provide one (1) NT0X84AA filler when position 05 is not equipped and provide one (1) P0575239 filler for each other position (33 or 47) that is not equipped.
- 2) Provide one (1) P0715616 Blank Personality Plate in bulkhead pos. 47 when filler panels P0575239 or MTD are equipped in 33 and 47.
- 3) Provide one (1) P0726351 Blank Personality Plate in bulkhead position 05 when filler panel NT0X84AA or dual disk drive is equipped in position 05.
- RUL8 1) Provide one (1) NTRX33DY when the office utilizes the horizontal power configuration. This kit consists of power ca-

bles, a separation bracket, and hardware. See ECM 683 for a description of horizontal power.

- 2) Provide one (1) NTRX33DZ when the office utilizes the vertical/ external power configuration. This kit consists of a power filter kit, cables, boots, lugs, and hardware. See ECM 683 for a description of vertical/external power.

RUL9 1) Provide one (1) NTRX3541 English label kit when the cabinet is required for customers in an English speaking environment.

RUL10 1) Provide one LWJRX33DA and one ADRX33DA drawing to assist the installer when provisionable shelves are to be field installed.

MULTI-PROTOCOL CONTROLLER

PEC CODE: NTZZ09GA

| CPC CODE: B0231877

| RATING: Manufactory Discontinued

| REPLACES: Not applicable.

| REPLACED BY: NTZZ09KA

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: The NTZZ09GA provides a Multi-protocol Controller CP and design label for interface of the IOC shelf to a modem for various applications.

REFERENCE DOCUMENTATION: SLZZ09GA 00 01
NTZZ09GA REL 01

MARKETS: Applicable markets:

Canada
US

ISSUE AUTHOR: Samuel Zhou Dept. S646 (BRW)

MAIN CONTACT: Erica Keltner Dept. 3471 (RTP)

NTZZ09GA EMC5-01-MPC-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 93 12 20	----- ECM 613 18	Previous history not available Manufactury discontinued.

The Multi-protocol Controller is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Multi-protocol Controller CP	NT1X89AA		1	X	Y	AP
Desig. Label For NT1X89AA	P0664841		1	X	Y	AP

EQUIPMENT FLAGGED '##':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) The NT1X89AA can be assigned to shelf mounting positions X = 04, 18, 32, and CP position Y = 04, 06, 08, 10, 12, 14, 16, 18, 20.

RULES:

- AP 1) When PEC NTZZ09GA is ordered, these items are provided.

ENHANCED MULTI-PROTOCOL CONT CP

PEC CODE: NTZZ09KA

CPC CODE: B0231874

| RATING: MD.

REPLACES: NTZZ09GA

| REPLACED BY: NT1X89BB

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: The NTZZ09KA provides an Enhanced Multi-protocol Controller CP and a design label for interface of the IOC shelf to a modem for various applications.

REFERENCE DOCUMENTATION: SLZZ09KA 00 01
NTZZ09KA REL 01

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: Erica Keltner Dept. 3471 (PPK)

MAIN CONTACT: Erica Keltner Dept. 3471 (PPK)

NTZZ09KA EMC5-01-MPC-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 93 12 20 95 02 03	----- ECM 613 18 ECM 613 26	Previous history not available Relace NTZZ09GA. Gate 3 for NT1X89BB declared.

The Enhanced Multi-protocol Cont CP is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Enhanc. Multi-Protocol Cont	NT1X89BA		1	X	Y	AP
Desig. Label For NT1X89BA	P0708961		1	X	Y	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) The NT1X89BA can be assigned to shelf mounting positions X = 04, 18, 32, and CP position Y = 04, 06, 08, 10, 12, 14, 16, 18, 20.

RULES:

- AP 1) When PEC NTZZ09KA is ordered, these items are provided.

ENET IN C42 (S/DMS) CABINET

PEC CODE: NTZZ10LA

CPC CODE: B0234286

| RATING: MD

REPLACES: NTZZ10AA

REPLACED BY: NTZZ10LC

ABBREVIATION NAME: ENC

ENGINEERING DESCRIPTION: The Enhanced Network in S/DMS Cabinet houses up to 4 Network shelves of one plane. Each shelf provides a nominal Switching capacity of 32 K-channels.

REFERENCE DOCUMENTATION: NTZZ10LA REL 04
SLZZ10LA 00 04

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: NTC: Jerry Palmer DEPT. 3471 (PPK)

MAIN CONTACT: NTC: Jerry Palmer DEPT. 3471 (PPK)

NTZZ10LA EMC5-01-NET-5 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
92 08 28	ECM 627 02	NTZZ10CA is MD'd.
92 10 06	ECM 627 03	NT9X40BA is A&M and rep. by NT9X40BB
92 12 22	ECM 627 04	Changes due to ECD#: 018-39706
		E.T.# 15619,23643: Corr. to RUL11
93 05 18	ECM 627 05	E.T.# 26823: Item 3 is added in RUL8.
		Modifications to RUL11.
94 03 10	ECM 627 07	Change C42 Mechanical Hardware
94 06 13	ECM 627 08	ET52423 - Add FSP Cover Assembly.
95 01 24	ECM 627 10	Network shelf assembly NT9X0818
		replaces NT9X0801 assembly. (ECD 018-41361).
95 04 17	ECM 627 11	Add NTZZ10QA Plane 0 Labels and
		NTZZ10RA Plane 1 Labels.
95 05 19	ECM 627 12	Added Streamline Bulkheads to section.
95 10 31	ECM 627 14	Removed frame fail lamps per ECD
		018-45801. Correct power filter label
		quantity per ET 28109.
96 03 18	ECM 627 16	MD section, replaced by NTZZ10LC

The Enhanced Network in S/DMS is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
S/DMS Enhanced Network Cab.	NT9X05AC		1			AP
C42 Cabinet Mechanical Assy	NT9X95BA		1			AP-01
Frame Supervisory Panel	NT9X03AA	FSP	1	52		AP
Network Shelf Assy	NT9X0818		1	39		AP-01
+5V 80A Power Converter CP	NT9X30AA		2	39	4F, 36F	AP
-5V 20A Power Converter CP	NT9X31AA		2	39	1F, 33F	AP
CPU CP	NT9X13FA		1	39	7F	AP
Network Clock & Msg CP	NT9X36BA		1	39	8F	AP
Filler Face Plate	NT9X19AA		8	39	17F-24F	AP
16K x 16K Chan Term Xpt CP	NT9X35CA		4	39	9F, 10F, 31F, 32F	AP
Remote Terminal I/F PB	NT9X26AB		1	39	7R	AP
Quad DS-512 Fiber I/F PB	NT9X40BB		1	39	8R	AP
PB Filler Face Plate	NT9X19BA		1	39	9R	AP
PB Filler Face Plate	NT9X19BA		8	39	17R-24R	AP
FSP Term Blk Cover Assembly	A0368392			52		RUL1
Network Shelf Assy Pkg	NTZZ10BA			00, 13, 26		RUL1
Blank Shelf Assembly	NT0X24BD			00, 13, 26		RUL1
Enhanced Network Shelf Assy	NT9X0818	ENET		00, 13, 26		RUL1
Filler Packfill	NT9X01FB			00, 13, 26		RUL1
Screws & Washers	P097F813			00, 13, 26		RUL1
	P0284154					RUL1
	P0183220					RUL1
16K x 16K Chan Term Xpt CP	NTZZ10JA			00, 13, 26	10F	RUL2
16K x 16K Chan Xpt CP	NTZZ10KA			XX	11-16, 25-30F	RUL2
Filler Face Plate	NT9X19AA			XX	10F-16F 25F-32F	RUL3
DS-30 Interface Assembly	NTZZ10GA			XX	10R-16R 25R-32R	RUL5
Quad DS-512 Fiber I/F PB	NTZZ10HA			XX	10R-16R 25R-32R	RUL4
PB Filler Face Plate	NT9X19BA			XX	10R-16R 25R-32R	RUL6
96 DS-30 Bulkhead Assembly	NTZZ10DA			XX		RUL7
224 DS-30 Bulkhead Assembly	NTZZ10EA			XX		RUL7
Fiber Bulkhead Assembly	NTZZ10FA			XX		RUL7
Streamline Bulkhead Assy	NTZZ10PA			XX		RUL7
3 DS-512/16 DS-30 I/F PB	NTZZ10MA			XX	10R-16R 25R-32R	RUL8
Terminal Block Des.Strip	P0732511		1			RUL10
Power Filter Label	P0732513		1			RUL10
Horizontal Power Cab.kit	NT9X9531		1			RUL11

Retired Equipment
ENET in C42 (S/DMS) CABINET

NTZZ10LA
EMC5-01-NET-5
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EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
(for Cabinetized Appl.) Stand-alone Power Cab. kit (for non-Cabinetized Appl.)	NT9X9532		1			RUL11
ENET Plane 0 Shelf Labels	NTZZ10QA		1	XX		RUL13
ENET Plane 1 Shelf Labels	NTZZ10RA		1	XX		RUL14
Optical Fiber Label	P0736273		1	39		AP
DES LABEL (NT9X13FA)	P0697525		1	39	7F	AP
DES LABEL (NT9X36BA)	P0704531		1	39	8F	AP
DES LABEL (NT9X35CA)	P0704533		4	39	9F, 10F 31F, 32F	AP
DES LABEL (NT9X26AB)	P0705003		1	39	7R	AP
DES LABEL (NT9X40BB)	P0734155		1	39	8R	AP
ESP Ground Terminator Assy.	NT9X0324		1			RUL12
C42 Cabinet Mechanical Assy	NT9X95BA					NOTE2
Cooling Unit	NT9X95CU		1			AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase.
Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if
they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufac-
tured and cannot be ordered.

NOTES:

- 1) XX can be one of 00, 13, 26, and 39.
- 2) Refer to NT9X95BA(EMA4-07-001) for additional mechanical
hardware requirements for C42 Cabinet.

RULES:

- AP 1) When PEC NTZZ10LA is ordered, these items are provided.
- 2) The NT9X95BA contains the NT9X9575 Cabinet Framework.
- The NT9X9575 framework provides earthquake and EMI protection. The framework is 72" high, 28" deep and 42" wide.
- Refer to NT9X95BA(EMA4-07-001) for additional mechanical hardware requirements for C42 (S/DMS) Cabinet.
- AP-01 1) This PEC is always provided on the NT9X05AC and is shown herein for completeness.
- RUL1 1) Provide one (1) NTZZ10BA, Network Shelf Assy Pkg, for each additional network shelf required. The first shelf at position 39 is always provided to the cabinet. Assign the NTZZ10BA to positions 26,13, or 00 as required.
- (OR)
- 2) Provide one (1) NT0X24BD Blank Shelf Assy for each unequipped position 26, 13, and 00, to satisfy the forced air cooling requirements of the cabinet,
- (OR)
- 3) Provide one (1) NT9X01FB Filler Packfill per each enhanced network shelf assembly when shelf is not equipped with circuit packs. Note, you require NT9X0818 Network shelf assembly to mount the filler packfill(NT9X01FB) in ENET shelves. Provide four (4) P097F813 screws, one (1) P0284154 washer and one (1) P0183220 locker washer per Enhanced Network shelf assembly.
- 4) A fully equipped cabinet (i.e. four (4) shelves) has the capacity of up to 128K channels. Each shelf provides the switching for speech links interfacing up to 15 I/F PB.
- 5) For applications outside of North America, provide (1) FSP Terminal Block Cover Assembly for each ENET Cabinet.
- RUL2 1) Assign the first twelve (12) NTZZ10KA, 16K x 16K Chan Xpt CP, on the first shelf to adjacent slot pairs in the following order: (30F-29F), (12F-11F), (28F-27F), (14F-13F), (26F-25F), (16F-15F).

- 2) In subsequent shelves the Cross point card is assigned as follows: Assign six (6) NTZZ10KA CP's to odd slots 11F, 13F, 15F, 25F, 27F, and 29F. The next group of seven (7) Cross point CP's are assigned as follows: Assign one (1) NTZZ10JA, 16K x 16K Chan Term Xpt CP, to even numbered slots 10F and 32F. Assign six (6) NTZZ10KA CP's to even slots 12F, 14F, 16F, 26F, 28F, and 30F.
 - 3) Assign the CP's on each additional shelf as per 2) above. Fill each shelf before starting the next.
- RUL3 1) Provide one (1) NT9X19AA, CP Filler Face Plate in each slot not equipped with a Circuit Pack to satisfy forced air cooling requirements of the cabinet.
- RUL4 1) Provide one (1) NTZZ10HA Quad DS-512 Fiber Interface for every four (4) DS-512 fiber speech links to be terminated.
- 2) Fiber speech links originate from Series II peripherals (FXPMs)
 - 3) Card slot assignment of NTZZ10HA follows the same assignment rules as the NT9X35 Crosspoint CP. There cannot be a paddleboard provisioned in the rear card slot without a corresponding Crosspoint CP provided in the front. Card slot assignment for the first shelf is as follows: 10,32,31,30,29,12,11,28,27,14,13,26,25,16,15. The card slot assignment for subsequent shelves is: 31,11,13,15,25,27,29,10,32,12,14, 16,26,28,30.
- RUL5 1) Each NTZZ10GA, DS-30 Interface Assembly, can terminate 16 DS-30 copper speech links or 15 DS-30 message links. Therefore, provide one (1) NTZZ10GA for every 16 DS-30 copper speech links or 15 single port PMs (i.e. TMs and MTMs).
- 2) Copper speech links originate from Series I peripherals (DCMs, MTMs, etc) or from non-fiberized Series II peripherals.
 - 3) Card slot assignment of NTZZ10GA follows the same assignment rules as the NT9X35 Crosspoint CP. There cannot be a paddleboard provisioned in the rear card slot without a corresponding Crosspoint CP provided in the front. Refer to Rule 2 and 5 for complete assignment rules.
- RUL6 1) Provide one (1) NT9X19BA, PB Filler Face Plate in each slot not equipped with a NTZZ10GA or NTZZ10HA or NTZZ10MA to satisfy the forced air cooling requirements of the cabinet.

- RUL7 1) Two bulkhead I/F panels are required for each equipped shelf position, one for the left cabinet cable riser and one for the right (cabinet viewed from the rear).
- 2) Provide one (1) NTZZ10FA, Fiber Bulkhead Assembly, if slots 10R-16R and 25R-32R are to be used for fiber interface only. No NT9X41BA/45BA CPs can ever be equipped in these slots.
- 3) If there are up to three (3) NT9X41BA/45BAs per half shelf, provide one (1) NTZZ10DA, 96 DS-30 Bulkhead Assembly. In this case, the DS-30 speech links terminating on the half shelf will be cabled directly to the Series I peripherals. In this case NT9X41BAs are restricted to a maximum of three (3) per half shelf, or six (6) per shelf assembly.
- 4) If there are more than three (3) NT9X41BA/45BAs per half shelf, provide one (1) NTZZ10EA, 224 DS-30 Bulkhead Assembly. In this case, the DS-30 speech links terminating on the half shelf will be cross connected at an SLC. In this case NT9X41BAs are restricted to a maximum of seven (7) per half shelf, or 14 per shelf assembly.
- 5) For Streamline applications only, provision:
two (2) NT9X8909 Streamline Bulkhead Assemblies.
- RUL8 1) Each NTZZ10MA, can terminate 3 DS-512 fiber links and 16 DS-30 copper speech links or 15 DS-30 message links. For Initial and ENET Upgrade (Retrofit) jobs provision NTZZ10MAs for a combination of 16 DS-30 copper and 3 DS-512 fiber links. For any remaining copper and fiber links, default termination to NTZZ10GAs and NTZZ10HAs respectively.
- 2) For ENET installed offices, replace NTZZ10GAs with NTZZ10MAs as many as required on fiber peripheral extensions. Once all NTZZ10GAs are replaced use initial office rules. Note that for offices having excess copper links, give recommendation to the customer to make use of NTZZ10MAs in case of future SERIES II peripheral extensions.
- 3) Note that, offices equipped with NT9X45BA which are in NTZZ10MA BB must have at least BCS33 load.
- | RUL9 1) Deleted.
- RUL10 1) Provide one (1) P0732511 terminal block designation strip per ENC cabinet when powering the enhanced network cabinet in a streamline lineup.

- | 2) Provide one (1) P0732513 power filter label per ENC cabinet when powering the enhanced network cabinet in a stand-alone lineup.
- RUL11 1) Provide one (1) NT9X9532 external Cabling Interface Kit when powering the NT9X05AC cabinet from the 7 foot PDC frame OR powering from the Model B CPDC (NTRX31CA) cabinet, OR powering from the NTRX31AA or from the NTRX31BA CPDC cabinet which is in the different lineup than the NT9X05AC. This kit includes cables, filters, and miscellaneous mounting hardware.
- 2) Provide one (1) NT9X9531 Horizontal Power Cabling Interface Kit when powering the NT9X05AC cabinet from the NTRX31AA or from the NTRX31BA CPDC cabinet which is in the same lineup as the NT9X05AC. This kit includes power cables, terminal blocks, and miscellaneous mounting hardware.
- RUL12 1) Provide one (1) NT9X0324 ESP Ground Terminator Assembly in all British telephone system.
- RUL13 1) Provide one (1) NTZZ10QA Plane 0 Shelf Labels for each NT9X0818 ENET shelf designated as Plane 0.
- RUL14 1) Provide one (1) NTZZ10RA Plane 1 Shelf Labels for each NT9X0818 ENET shelf designated as Plane 1.

STRATUM II SHELF

PEC CODE: NTZZ09MA

| CPC CODE: B0231872

| RATING: MD

| REPLACES: Not Applicable

| REPLACED BY: NT3X95AB

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: This shelf houses a remote clock for Stratum
II synchronization of the DMS.REFERENCE DOCUMENTATION: SLZZ09MA 00 01
NTZZ09MA REL 01

MARKETS: Applicable markets:

US

ISSUE AUTHOR: Samuel Zhou Dept. S646 (BRW)

MAIN CONTACT: Erica Keltner Dept. 3471 (RTP)

NTZZ09MA EMC5-01-ROS-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 93 12 20	----- ECM 613 18	Previous history not available Md'd and replaced by NT3X95AB.

The Stratum II Shelf is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Remote Oscillator Shelf	NT3X95AB		1			AP
Remote Osc. Shelf Assy	NT3X9507		1			AP-01
Osc. (DMS-Core) & I/F CP	NT3X16AB		2		01,15	AP-01
Osc. (DMS-Core) & I/F CP	NTZZ09PA				09,23	RUL1
Pwr Converter (+5,+12,+24V)	NT1X78AA		2		06,20	AP-01
Filler Face Plate 2.62	NT0X50BE		3		09,12,23	AP-01
Filler Face Plate 1.72	NT0X50BF		3		04,18,26	AP-01
Filler Face Plate 0.875	NT0X50BA		1		14	AP-01
Desig. Strip (NT3X95AB)	P0699935					AP-01

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase.
Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if
they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufac-
tured and cannot be ordered.

NOTES:

RULES:

AP 1) When PEC NTZZ09MA is ordered, these items are provided.

AP-01 1) These Items are provided on NT3X95AB and are shown here for
completeness.

- RUL1 1) If 'hot' spares are requested by the customer they may be equipped in positions 09 and 23. If they are equipped the Filler Face Plates always provided in those positions must be discarded.

STRATUM 2.5 SHELF

PEC CODE: NTZZ09NA

| CPC CODE: B0231871

| RATING: MD

| REPLACES: Not Applicable.

| REPLACED BY: NT3X95BB

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: This shelf houses the DMS clock for DMS-Core applications. This clock provides a capability that is not Stratum rated, however, in terms of accuracy, falls in between Stratum II and Stratum III.

REFERENCE DOCUMENTATION: SLZZ09NA 00 02
NTZZ09NA REL 01

MARKETS: Applicable markets:

Canada
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: Samuel Zhou Dept. S646 (BRW)

MAIN CONTACT: Erica Keltner Dept. 3471 (RTP)

NTZZ09NA EMC5-01-ROS-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 93 12 20	----- ECM 613 18	Previous history not available Md'd and replaced by NT3X95BB.

The Stratum 2.5 Shelf is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Stratum 2.5 Osc. Shelf	NT3X95BB		1			AP
Remote Osc. Shelf Assy	NT3X9507		1			AP-01
Osc. (DMS-Core) & I/F CP	NT3X16BB		2		01,15	AP-01
Hot Spare Str 2.5 Osc & I/F	NTZZ09QA				09	RUL1
Pwr Converter (+5,+12,+24V)	NT1X78AA		2		06,20	AP-01
Filler Face Plate 2.62	NT0X50BE		1		12	AP-01
Filler Face Plate 2.62	NT0X50BE				09,23	RUL1
Filler Face Plate 1.72	NT0X50BF		3		04,18,26	AP-01
Desig. Strip (NT3X95BB)	P0699936					AP-01

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

AP 1) When PEC NTZZ09NA is ordered, these items are provided.

AP-01 1) These items are always provided to the NT3X95BB and are shown here for completeness.

- RUL1 1) If 'hot' spares are requested by the customer provide one
 (1) NTZZ09QA.
- 2) If the Hot Spares Building Block is not equipped, provide
 two (2) NT0X50BE Filler Face Plates.

HOT SPARE STRATUM 2.5
OSCILLATOR AND INTERFACE

PEC CODE: NTZZ09QA

CPC CODE: B0232277

| RATING: MD

REPLACES: Not Applicable

| REPLACED BY: NT3X16BB

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: NTZZ09QA contains the equipment necessary to provide hot spare capability to the Stratum 2.5 Oscillator shelf.

REFERENCE DOCUMENTATION: SLZZ09QA 00 01
NTZZ09QA REL 01

MARKETS: Applicable markets:

Canada
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: Erica Keltner Dept. 3471 (PPK)

MAIN CONTACT: Erica Keltner Dept. 3471 (PPK)

NTZZ09QA EMC5-01-ROS-3 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 93 12 20 94 04 18	----- ECM 613 18 ECM 613 19	Previous history not available Use new EMS template. Show rating as MD.

The Hot Spare Stratum 2.5 Oscillator and Interface is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Osc. (DMS-Core) & I/F CP	NT3X16BB		2	XX	09,23	AP
Desig. Label (NT3X16BB)	P0706626		2	XX	09,23	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

AP 1) When PEC NTZZ09QA is ordered, these items are provided.

HOT SPARE STRATUM II OSC. & I/F

PEC CODE: NTZZ09PA

CPC CODE: B0232053

| RATING: MD.

REPLACES: Not applicable.

| REPLACED BY: NT3X16AB

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: NTZZ09PA contains the equipment necessary to provide hot spare capability to the Stratum II Oscillator shelf.

REFERENCE DOCUMENTATION: SLZZ09PA 00 01
NTZZ09PA REL 01

MARKETS: Applicable markets:

US

ISSUE AUTHOR: Erica Keltner Dept. 3471 (PPK)

MAIN CONTACT: Erica Keltner Dept. 3471 (PPK)

NTZZ09PA EMC5-01-ROS-4 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 93 12 20 94 04 18	----- ECM 613 18 ECM 613 19	Previous history not available Use new EMS template. Show rating as MD.

The Hot Spare Stratum II Osc. & I/F is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Osc. (DMS-Core) & I/F CP	NT3X16AB		2	XX	09,23	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

AP 1) When PEC NTZZ09PA is ordered, these items are provided.

9 TRACK TAPE CTRL CP COOK

PEC CODE: NTZZ09HA

CPC CODE: B0231876

| RATING: MD

| REPLACES: Not Applicable

| REPLACED BY: NT1X68BC

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: The NTZZ09HA provides a 9 Track Tape Controller CP (Cook) and desg. label for interface of the IOC shelf to a Cook Magnetic Tape Drive.

REFERENCE DOCUMENTATION: SLZZ09HA 00 01
NTZZ09HA REL 01

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: NTI: Erica Keltner Dept. 3471 (PPK)

MAIN CONTACT: NTi: Erica Keltner Dept. 3471 (PPK)

NTZZ09HA EMC5-01-TAP-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 94 07 08	----- ECM 613 22	Previous history not available EC 018-42674 MD's NT1X68AC and is replaced by NT1X68BC. Therefore, NTZZ09HA is MD'd.

The 9 Track Tape Ctrl CP Cook is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
# 9 Track Tape Ctrl CP Cook	NT1X68AC		1	X	Y	AP
# Desig. Label For NT1X68AC	P0613392		1	X	Y	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT1X68AC P0613392	MD MD	NT1X68BC P0616642

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) The NT1X68AC can be assigned to shelf mounting positions X = 04, 18, 32, and CP position Y = 04, 06, 08, 10, 12, 14, 16, 18, 20.

RULES:

- AP 1) When PEC NTZZ09HA is ordered, these items are provided.

MAGNETIC TAPE DRIVE ASSEMBLY (-48V)
FOR MODEL B CIOE

PEC CODE: NTZZ32BM

CPC CODE: B0238384

| RATING: MD.

REPLACES: Not applicable

| REPLACED BY: NTZZ32BN

ABBREVIATION NAME: MTD

ENGINEERING DESCRIPTION: The NTZZ32BM assembly contains a magnetic tape drive and the cables required to mount this unit on a CIOE.

REFERENCE DOCUMENTATION: SLZZ32BM 00 02
NTZZ32BM REL 02

MARKETS: Applicable markets:

US
Europe
Asia/Pacific
CALA

ISSUE AUTHOR: NTI: Erica Keltner Dept. 3471 (PPK)

MAIN CONTACT: NTI: Erica Keltner Dept. 3471 (PPK)

NTZZ32BM EMC5-01-TAP-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 05 21	API 445 01	To introduce the MTD BB for CIOE Model B
93 11 16	ECM 683 01	EC 018-41434 Remove Breaker Des. label and add Fuse Des. label. Correct Fan Management Unit PEC and label.
94 11 21	ECM 613 25	EC 024-93121 MD this BB since the FMU and Cooling Unit kit are always required now with the CIOE cabinet.

The Magnetic Tape Drive Assembly (-48V) for Model B CIOE is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Mag Tape Drive Unit (Cook)	NT0X44AB	MTD	1	33		AP
Power Cable Assembly	NTRX33MC		1	33		AP
Filler Panel 3 Inch	P0654622		1	57		AP
Screw	P097F813		4	57		AP
Washer	P0284154		1	57		AP
Lock washer	P0183220		1	57		AP
10 " Cooling Unit Kit	NTRX92AA		1	00		AP
Fuse Des. Label MSP	P0741924		1	61		AP
Fan Management Unit	NTRX54BA	FMU	1	61	19	AP
Design. Label (NTRX54BA)	P0741680		1	61	19	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) An MTD mounted in position 33 occupies mounting position 47 also.

RULES:

- AP 1) When PEC NTZZ32BM is ordered, these items are provided.

Retired Equipment
Magnetic Tape Drive Assembly (-48V)
for Model B CIOE

NTZZ32BM
EMC5-01-TAP-2
Page 3

- 2) MTD (NT1X68BC) controller cards can be assigned to only slot 4 or slot 6 of the IOC shelf in the CIOE. The MTD connected to these slots must be inside the same Faraday cage of the CIOE or the adjacent CIOE.

MAGNETIC TAPE DRIVE ASSEMBLY
MODEL B CIOE FOR INTERNATIONAL MARKET

PEC CODE: NTZZ32LA

CPC CODE: B0238383

| RATING: MD.

REPLACES: Not Applicable

| REPLACED BY: NTZZ32LB

ABBREVIATION NAME: MTD

ENGINEERING DESCRIPTION: The NTZZ32LA assembly contains a magnetic tape drive and the cables required to mount this unit on a CIOE Model B for International applications.

REFERENCE DOCUMENTATION: SLZZ32LA 00 01
NTZZ32LA REL 01

MARKETS: Applicable markets:

Europe
Asia/Pacific
CALA

ISSUE AUTHOR: NTI: Erica Keltner Dept. 3471 (RTP)

MAIN CONTACT: NTC: Erica Keltner Dept. 3471 (RTP)

NTZZ32LA EMC5-01-TAP-3 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 06 03	ECM 613 21	To introduce the MTD BB for CIOE Model B in International applications EC 024-93121 MD this BB and replace it with NTZZ32LB since the FMU and Cooling Unit kit are removed from the stocklist.
94 11 21	ECM 613 25	

The Magnetic Tape Drive Assembly Model B CIOE for International market is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Mag Tape Drive Unit (Cook)	NT0X44BB	MTD	1	33		AP
Power Cable Assembly	NTRX33MC		1	33		AP
Filler Panel 3 Inch	P0654622		1	57		AP
Screw	P097F813		4	57		AP
Washer	P0284154		1	57		AP
Lockwasher	P0183220		1	57		AP
10" Cooling Unit Kit	NTRX92AA		1	00		AP
Fan Management Unit(-48V)	NTRX54BA	FMU	1	61	19	AP
Design. Label (NTRX54BA)	P0741680		1	61	19	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
N/A		

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) An MTD mounted in position 33 occupies mounting position 47 also.

RULES:

- AP 1) When PEC NTZZ32LA is ordered, these items are provided.

- 2) MTD (NT1X68BC) controller cards can be assigned to only slot 4 or slot 6 of the IOC shelf in the CIOE. The MTD connected to these slots must be inside the same Faraday cage of the CIOE or the adjacent CIOE.

I/O TERMINAL CONTROLLER CP

PEC CODE: NTZZ09DA

CPC CODE: B0231880

| RATING: MD

REPLACES: N/A

| REPLACED BY: NTZZ09EA

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: The NTZZ09DA provides an Input/Output Terminal Controller CP and design label for interface of the IOC shelf to a terminal device (VDU, PRT, MODEM, etc.)

REFERENCE DOCUMENTATION: SLZZ09DA 00 01

NTZZ09DA REL 01

MARKETS: Applicable markets:

Canada
US

ISSUE AUTHOR: NTI: Bob Belvin Dept. 3471 (PPK)

MAIN CONTACT: NTI: Richard Mathias Dept. 3471 (PPK)

NTZZ09DA EMC5-01-TC-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 96 03 19	----- ECM 613 32	Previous history not available MD Section. NT1X67BC is MD per ECD 018-45271.

The I/O Terminal Controller CP is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
I/O Terminal Controller CP	NT1X67BC		1	X	Y	AP
Desig. Label For NT1X67BC	P0623517		1	X	Y	AP

EQUIPMENT FLAGGED '##':

PEC	RATING	REPLACED BY PEC
NT1X67BC	MD	NT1X67BD

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) The NT1X67BC can be assigned to shelf mounting positions X = 04, 18, 32, and CP position Y = 04, 06, 08, 10, 12, 14, 16, 18, 20.

RULES:

- AP 1) When PEC NTZZ09DA is ordered, these items are provided.

INPUT/OUTPUT EQUIPMENT FRAME

NTZZ09TA

RATING: MD. Replaced by NTZZ09TB

ABBREVIATION NAME: IOE

ENGINEERING DESCRIPTION: The Input/Output Equipment Frame houses the DMS input/output devices, mountable on a frame.

REFERENCE DOCUMENTATION: SLZZ09TA 00 01
NTZZ09TA REL 01

MARKETS: Applicable markets:

US

NTZZ09TA EMC5-01-001 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
92 11 09	ECM 613 08	Change power cable rules for ROS shelf (MS0X43AD)
92 12 14	ECM 613 10	ET21443 -Make NT0X36AB always provided to match the stocklist.

The Input/Output Equipment Frame is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
IOE Frame	NT0X43AD		1			AP
Mag Tape Drive Unit (Cook)	NT0X44AB	MTD		18, 51		RUL1
Frame Supervisory Panel	NT0X28AL	FSP	1	45		AP-01
POWER CONTROL & ALARM CP	NT0X36AB		1	45		AP
FSP Cover	P0673914			45		AP
Disk Drive Unit Shelf	NTZZ09BA	DDU		04		RUL7
I/O Controller Module	NTZZ09CA	IOC		04, 18, 32		RUL2
Dist. Processor Peripheral	NTZZ09LA	DPP		18, 51		RUL3
Stratum II Rmt Osc. Shelf	NTZZ09MA	ROS		04, 32		RUL4
Filler Panel	P0575239			04, 18, 32, 51, 65		RUL5
Power Cable	NT0X95BA			18, 32		RUL6
Power Cable	NT0X95BD			32		RUL6
Power Cable	NT0X95BF			18, 32		RUL6
Power Cable	NT0X95BG			18		RUL6
Power Cable	NT0X95BJ			04		RUL6
Power Cable	NT0X95BK			04		RUL6
Power Cable	NT0X95CE			32		RUL6
Power Cable	NT0X4301			04		RUL6
Power Cable	NT0X4302			04		RUL6
Wiring: Stratum II/2.5 DMS-Core	NT0X43WC					RUL8
Wiring: Stratum II/2.5 DMS-Core	NT0X43WD					RUL9
Common Framework	NT0X25AA	FW	1			AP

FLAGS:

NOTES:

RULES:

- AP 1) When PEC NTZZ09TA is ordered, these items are provided.
- AP-01 1) This PEC is always provided to the NT0X43AD and is shown here for completeness.
- 2) a) Each NT0X28AL, FSP, comes equipped with one NT0X36AB, Power Control and Alarm card, which serves IOC or DDU shelves in positions 32 and 04.
- RUL1 1) The standard DMS MTD is the Cook Electric drive, NT0X44AB.
- 2) For an office which will have MTD's only, Magnetic Tape Drive Units are provisioned as follows:
- a) A minimum of two (2) is required per system, one for maintenance and one for back-up or image/spare.
- b) An additional two (2) may be required for LAMA/CAMA or Distributed Processor Peripheral (DPP).
- c) An extra MTD may be provided for separate Operational Measurement (OM) support.
- d) Maximum of ten (10) MTD per system.
- 3) In a disk office one MTD is retained primarily to enable physical transportation of data to and from the office and secondarily as a back up to the DDU.
- 4) The first MTD on an IOE frame must mount on position 51.
- 5) See figures one (1) through nine (9) for various frame configurations of MTD's.
- RUL2 1) A minimum of two I/O Controller Modules (IOC:00, IOC:01) is required per system. Provide two (2) NTZZ09CA.
- 2) Each shelf accommodates up to nine I/O device controller cards.
- 3) Provide one (1) NTZZ09CA I/O Controller Module for each additional nine I/O Device Controller Cards to be accommodated. Number these shelves IOC:02 and up.
- 4) Equip each shelf per MSZZ09CA.

- 5) See figures one (1) through nine (9) for various frame configurations of IOC's.
- 6) The IOC shelf and the devices (MTD, DDU, MAP etc.) it interfaces should be cabled to the same power feed on the Power Distribution Center (PDC).

- RUL3
- 1) The Distributed Processor Peripheral (DPP) will allow remote polling of Automatic Message Accounting (AMA) in the DMS-100F.
 - 2) The DPP Disk Drive Units are now provisionable under the Product Engineering Code (PEC), NTZZ09LA. Initial DPP offices will provide one (1) NTZZ09LA and either 380 or 760 MByte DPP 5 1/4" Winchester Disk Drive per office requirements.
 - 3) The 380 MByte AMATPS call record capacity is 3,341,520 AMA records. The 760 MByte DPP AMATPS call record capacity is 6,336,200 records.

Note - These figures represent actual storage values. DPP warning alarms will occur as these figures are reached.

- RUL4
- 1) Provide one (1) NTZZ09MA Stratum II Oscillator Shelf when Stratum II feature is required.
 - 2) The NTZZ09MA Shelf requires two -48V feeds and two sets of alarm and control signals from the FSP.
 - 3) The following rules apply to Stratum Shelf configurations:
 - a) There must be two available shelf positions in the IOE frame.
 - b) The IOE frame must be located within 200 feet of the CMC's or SuperNode cabinet.
 - c) The Stratum shelf must be powered from the same PDC as the CMC shelf or SuperNode cabinet.
 - 4) The NTZZ09MA has two backplanes mounted on the same shelf. Backplane "A" is located at slot positions 1 through 14 and backplane "B" is located at slot positions 15 through 27. There is a power converter located at slot 6 for backplane "A" and at position 20 for backplane "B".

- RUL5
- 1) Provide fourteen inch (355.6 millimeters) filler panels in positions not equipped.

RUL6 1) Depending on position of IOC (NTZZ09CA) and NTZZ09MA shelf power cables will be ordered as follows:

- a)
 - i) IOC position 04 NT0X95BK & NT0X95BJ
 - ii) IOC position 32 NT0X95BA & NT0X95BD
 - iii) IOC position 18 NT0X95BF & NT0X95BG
- b)
 - i) ROS position 04 NT0X4301 & NT0X4302 for "A" back-plane
 - ii) ROS position 04 NT0X95BJ & NT0X95BK for "B" back-plane
 - iii) ROS position 32 NT0X95BF & NT0X95CE for "A" back-plane
 - iv) ROS position 32 NT0X95BA & NT0X95BD for "B" back-plane

RUL7 1) The NTZZ09BA is to be mounted in IOE shelf position 04 only.

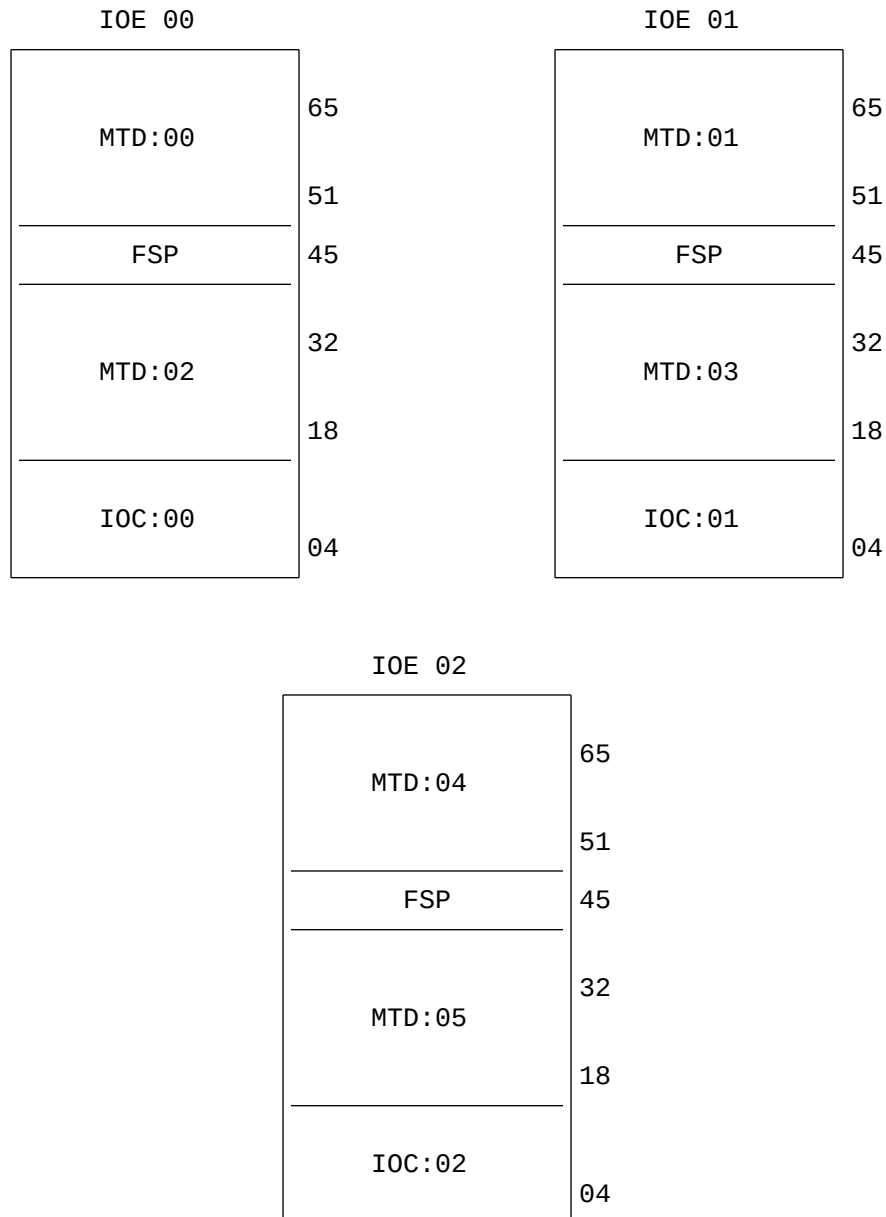
2) The 1st 8" DDU shall be located on the left side (slot 10) of the NT4X00AF Dual Disk Drive shelf (located in shelf Position 04). If a 2nd 8" DDU is required on the same shelf, it shall be located on the right side (slot 18).

3) With two 8" DDU's equipped, position 18 must be unequipped.

RUL8 1) Provide Interlock Wiring NT0X43WC for the NTZZ09MA Stratum II Shelf when assigned in position 04.

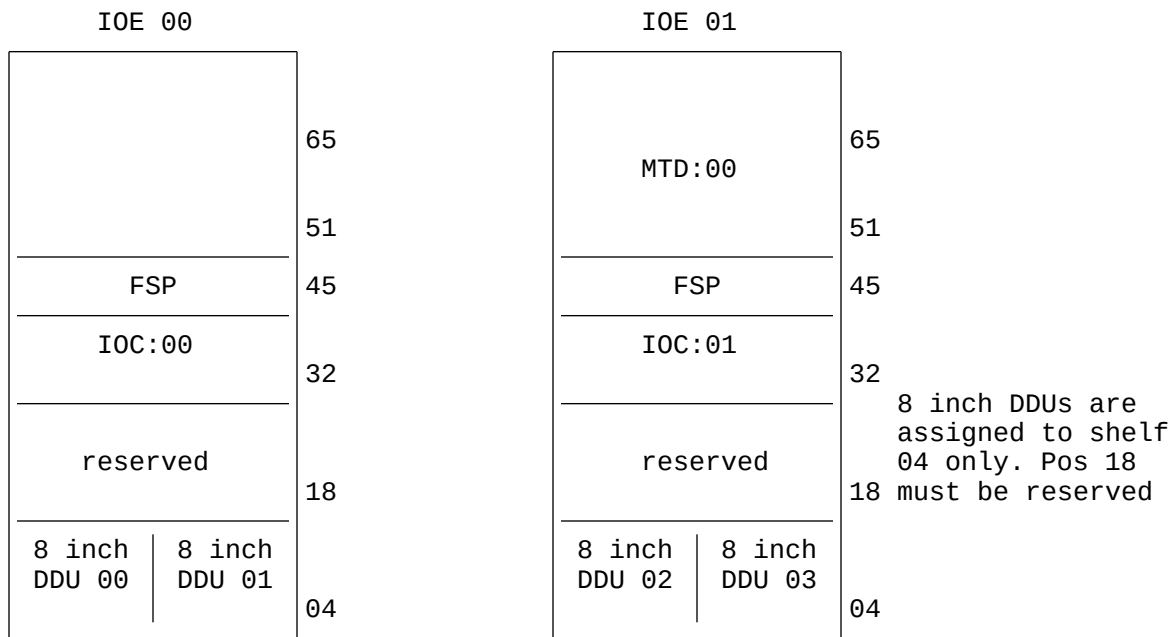
RUL9 1) Provide Interlock Wiring NT0X43WD for the NTZZ09MA Stratum II Shelf when assigned in position 32.

| RUL10 1) Reserved for future use.

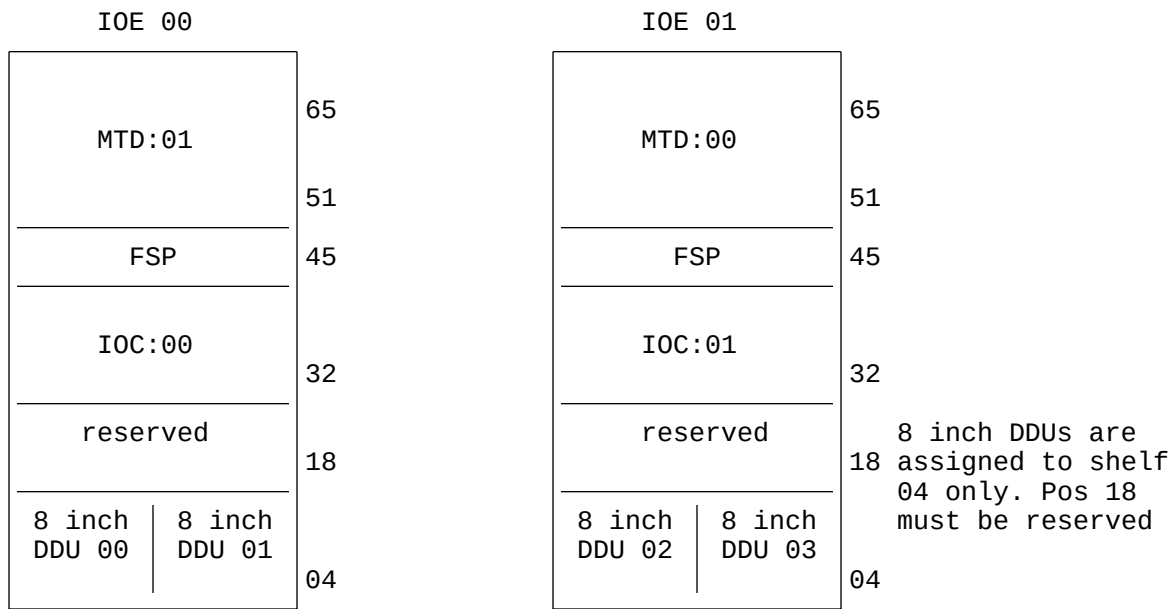


OFFICE WITH MTD'S ONLY

FIGURE 1

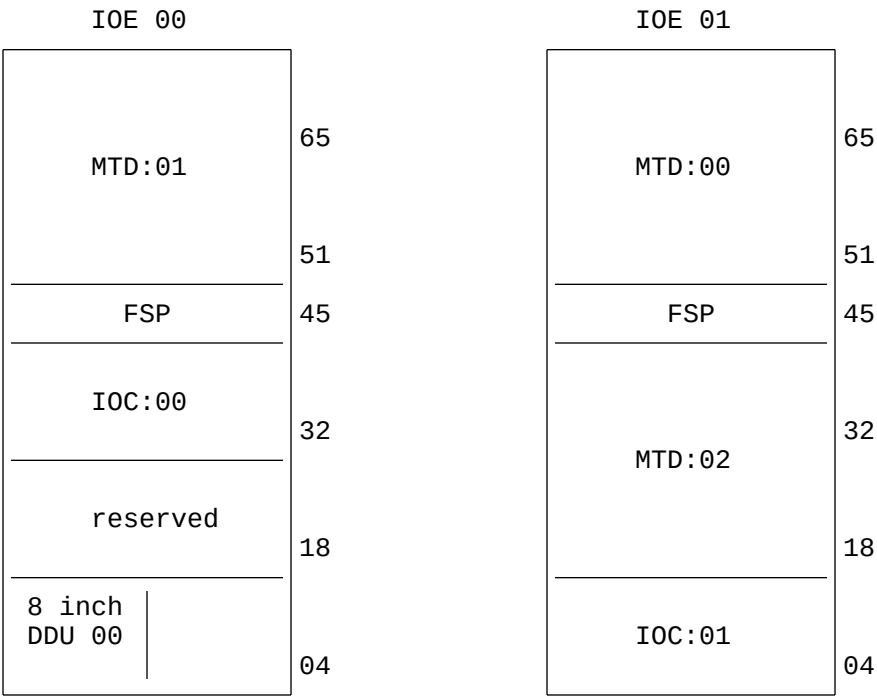


ONLY ONE MTD AND ONE OR MORE DDU'S
FIGURE 2



TWO (2) OR MORE MTD'S AND TWO (2) OR MORE DDU'S

FIGURE 3



ONE (1) OR MORE MTD'S AND ONLY ONE (1) DDU

FIGURE 4

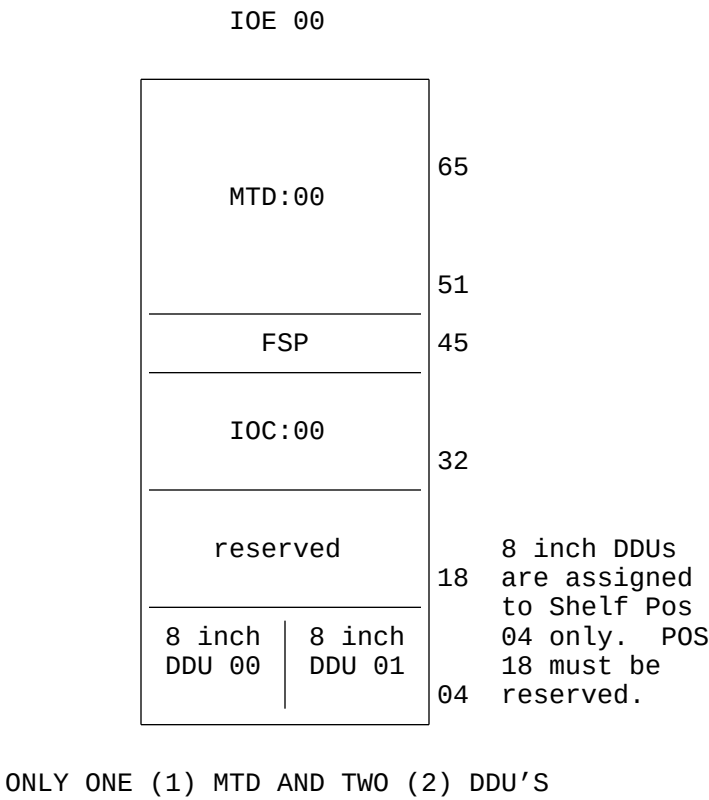
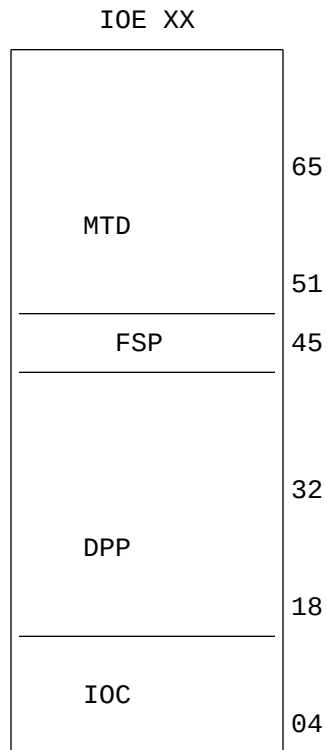


FIGURE 5



DPP MOUNTING RESTRICTIONS

FIGURE 6

** NOTE - A NTZZ09LA DPP unit cannot be equipped in the same frame that has an NTZZ09BA, NTZZ09MA, or any equipment provisioned in shelf position 18 due to fusing limitations at the Frame Supervisory Panel

RACK MOUNT LOW SPEED
DATA UNIT SHELF

PEC CODE: NTZZ24BA

CPC CODE: B0232140

| RATING: MD

REPLACES: Not Applicable

| REPLACED BY: UDS Data Units

ABBREVIATION NAME: DRS

ENGINEERING DESCRIPTION: NTZZ24BA block provides a shelf and associated hardware for rack mounted low speed Data Units.

REFERENCE DOCUMENTATION: SLZZ24BA 00 02
NTZZ24BA REL 02

MARKETS: Applicable markets:

Canada
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: NTI: Barry Bond Dept. 3471 (PPK)

MAIN CONTACT: NTI: Barry Bond Dept. 3471 (PPK)

NTZZ24BA EMC5-02-DRS-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 93 01 22	----- ECM 277 04	Previous history not available ECD 024-86857 Introduction of the NT4X25DH within BBLK NTZZ24BA as a replacement for the NT4X25BH.
96 01 05	ECM 277 11	Retire document and MD Data Unit per EC 18-45599 and 18-45600. Use UDS Data Units instead.

The Rack Mount Low Speed Data Unit Shelf is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Data Unit Rack Mount LS Shf	NT4X25DH		1			AP
Data Unit Ground & Mount HW	NT4X2591		1			AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT4X25DH	MD	No Replacement
NT4X2591	MD	No Replacement

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

AP 1) When PEC NTZZ24BA is ordered, these items are provided.

MODEM EQUIPMENT FRAME

PEC CODE: NTZZ24AA

CPC CODE: B0232141

| RATING: MD

REPLACES: Not applicable

| REPLACED BY: NONE

ABBREVIATION NAME: MOE

ENGINEERING DESCRIPTION: The modem equipment frame is used to mount modem equipment in an office equipped with Isolated System Grounding. The modem shelves will be electrically isolated from the framework with the shelf chassis connected to the logic return bar.

EC 018-51379 manufacture discontinues the NT0X43BA modem equipment frame. There is no replacement for this bay. For Canadian offices, modems may be placed in the IOE frame. Reference ECM 289 and EMS NT0X43AD.

REFERENCE DOCUMENTATION: SLZZ24AA 00 02
NTZZ24AA REL 02

MARKETS: Applicable markets:

Canada
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: NTI: Otis Gibbs Dept. 3471 (PPK)

MAIN CONTACT: NTI: Otis Gibbs Dept. 3471 (PPK)

NTZZ24AA EMC5-02-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
92 12 07	ECM 321 06	EC #018-39307 - Replace NT0X25AV with NT0X25AH. Change status of NT0X25AV to A&M.
93 01 15	ECM 321 08	1) ET 24703 - Introduce LaMarche Inverter. Correct the provision rules for NT0X28AF and P0673914 as AP-01 instead of AP. 2) Clarify that NT0X25AH is the Earth-quake EMI Framework.
93 11 10	ECM 321 09	Rename NT0X25AH as 'Universal Framework'
94 04 29	ECM 321 10	NT4X25BH is MD'd, replaced by NT4X25DH
94 09 20	ECM 321 11	ECD 018-43573 replaced NTRX34DA with NTMX1665.
95 02 20	ECM 321 12	ECD 018-44074 MD'd NT0X87AA Inverter Unit (200W).
95 03 07	ECM 321 13	ECD 006-21517 MD'd LAMARCHE Inverter and replaced with NTRX31DH Inverter.
95 10 23	ECM 321 16	ECD 018-46054 Add new mounting pos. 20 for DSM shelf.
96 01 18	ECM 321 18	ECD 018-45600 MD NT4X2591 and NT4X25DH with no replacements.
97 09 23	ECM 321 20	EC 018-51379 MDs NT0X43BA Modem bay, NT5X09AA Data Set (Modem) Shelf and associated cable and connector PECs. This EMS will be retired as a result of the NT0X43BA being MD'ed.

The Modem Equipment Frame is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
# Modem Equipment Frame	NT0X43BA		1			AP
Universal Framework	NT0X25AH		1			AP
# Data Set (Modem) Shelf	NT5X09AA	DSM		12, 18, 20, 26, 52, 66		RUL2
Over Barrier Jumper	A0324131					RUL3
# Rack Mount LS Data Unit Shlf	NTZZ24BA			19, 32, 54, 66, 67		RUL4
Frame Supervisory Panel	NT0X28AF	FSP	1	45		AP-01
Fr Supervisory Panel Cover	P0673914					AP-01
Equipment Shelf Assembly	NT3X25AA			10, 17, 24, 31, 38, 52, 59, 66		RUL6
# Connector & Housing Assy	NT0X4303			74		RUL6
# Cable Assembly	NT0X4311					RUL6
Inverter Unit (500W)	NTRX31DH			4, 12		RUL12
Inverter ISG Kit	NT0X43XD			4, 12		RUL12
\$ LaMarche Inverter	A0367433			4, 11		RUL8
\$ Isolation/Mounting Eqpt. for LaMarche Inverter	NTMX1665			4, 11		RUL8
# Inverter Unit (200W)	NT0X87AA			4, 11		RUL8
\$ Local Cable Assembly	NT0X0009					RUL8
\$ Local Cable Assembly	NT0X4306					RUL8
# Local Cable Assembly	NT0X4304					RUL7
# Power Cable Assembly	NT0X4307					RUL9
# Power Cable Assembly	NT0X4308					RUL9
# Power Cable Assembly	NT0X4309					RUL9
# Power Cable Assembly	NT0X4310					RUL9
# Power Cable Assembly	NT0X4312					RUL9
# Power Cable Assembly	NT0X4313					RUL9
# Power Cable Assembly	NT0X4314					RUL9
# Power Cable Assembly	NT0X4315					RUL9
# Power Cable Assembly	NT0X4316					RUL9
# Power Cable Assembly	NT0X4317					RUL9
Cable Assembly	NT8X4801					RUL9
Cable Assembly	NT8X4802					RUL9
Cable Assembly	NT0X8849					RUL9

Retired Equipment
Modem Equipment Frame

NTZZ24AA
EMC5-02-000
Page 3

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Wiring Drawing	WD0X43BA					RUL10
Wiring Drawing	LWJ0X43BA					RUL10
Hardware Lugs	A0288192					RUL11

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTRX34DA	MD	NTMX1665
NT0X87AA	MD	A0367433
NT0X0009	MD	N/A
NT0X4306	MD	N/A
A0367433	MD	NTRX31DH
NTMX1665	MD	NT0X43XD
NTZZ24BA	MD	NONE
NT0X43BA	MD	NONE
NT0X4303	MD	NONE
NT0X4304	MD	NONE
NT0X4307	MD	NONE
NT0X4308	MD	NONE
NT0X4309	MD	NONE
NT0X4310	MD	NONE
NT0X4311	MD	NONE
NT0X4312	MD	NONE
NT0X4313	MD	NONE
NT0X4314	MD	NONE
NT0X4315	MD	NONE
NT0X4316	MD	NONE
NT0X4317	MD	NONE
NT5X09AA	MD	NONE

DEV - DEVELOPMENT. These products are in the development phase.
Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if
they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufac-
tured and cannot be ordered.

NOTES:

RULES:

AP 1) When PEC NTZZ24AA is ordered, these items are provided.

| AP-01 1) This PEC is always provided to the NT0X43BA (MD) and is shown here for completeness.

RUL1 1) Reserved for future use.

| RUL2 1) Provide one (1) Data Set (Modem) Shelf, NT5X09AA (MD), to accommodate up to sixteen (16) modems.

2) A maximum of four (4) Data Set Shelves may be mounted at positions 12,18,20,26,52 and 66. The Data Set Shelves must be located within 50 ft of the connecting IOC shelf.

Due to the standard alarm wiring sequence from the FSP, Data Set Shelves must be provisioned in the following sequence: 12, 26, 52 and 66. See RUL3 for further information on wiring.

| 3) When modem pooling is a requirement, the Data Set Shelf is associated with a Data Unit Rackmount LS Shelf, NT4X25DH (MD). For this application the Data Set Shelves will be mounted in positions 18 and 52 only with the associated Data Unit Shelf being mounted in positions 32 and 66 respectively.

4) When an new NTRX31DH inverter is mounted in position 12. The next DSM shelf is to be located at position 20. Otherwise, the DSM shelf is to be located in position 18.

RUL3 1) Provide two (2) Barrier Jumpers A0324131 when a third Data Set Shelf is provisioned to jumper the A and B feed power from the first shelf. Similarly provision an additional two (2) Barrier Jumpers A0324131 when a fourth Data Set Shelf is provisioned to jumper the power feeds from the second shelf.

RUL4 1) Provide one (1) Data Unit Rackmount LS Shelf to accommodate up to sixteen (16) data units.

2) A maximum of four (4) Data Unit Shelves may be equipped in positions 19, 32, 54 and 67.

- 3) When modem pooling is a requirement, the Data Unit Shelves would be equipped in positions 32 and 66 with the associated Data Set Shelves being equipped in positions 18 and 52 respectively.
- 4) The entire datapath product line is being MD'd per a decision by PLM and LOB primes. No direct replacements exist. The company will support ISDN products instead, and recommend Motorola UDS as a datapath supplier when it is necessary to support customers.

RUL5 1) Reserved for future use.

RUL6 1) Provide one (1) Common Equipment Shelf, NT3X25AA to accommodate up to two (2) stand alone modems or other stand alone units up to a maximum of eight (8) shelves per frame.

2) Provide one (1) Connector Housing Assembly NT0X4303 (MD) per frame when one (1) or more Equipment Shelf Assembly NT3X25AA is equipped.

3) Provide one (1) Cable Assembly NT0X4311 (MD) per equipment shelf NT3X25AA when the provisioned stand alone modems do not require protected AC from the inverter. Do not provision a mix of AC and non AC powered modems on the same shelf.

RUL7 1) Provide one (1) Local Cable Assembly NT0X4304 (MD) for each modem pooling arrangement up to a maximum of two (2) per frame. The modem pooling arrangement will consist of a Data Unit Shelf NT4X25DH (MD) in positions 32 and 66 with an associated Data Set Shelf in positions 18 and 52.

RUL8 1) The LaMarche Inverter provides standard AC socket outlets for four (4) circuits (two dual outlets), and the maximum total consumption of units connected is not to exceed 500 Watts (120VAC nominal 4.15 Amps output). If the NT0X87AA is already equipped, the maximum total consumption is not to exceed 200 Watts. (A0367433 Inverter is MD'd and replaced with NTRX31DH).

2) Provide one LaMarche Inverter in position 04 per frame unless data shelves require separate power feeds. If separate power feeds are required, the two (2) LaMarche Inverters are mounted in positions 4 and 11.

3) If the NT0X87AA Inverter is provisioned, provide one (1) Inverter in position 4 when the Modem Frame is equipped with Equipment Shelf Assemblies NT3X25AA and/or one (1) or

two (2) Data Unit Shelves NT4X25DH (MD) provided a separate power source for the second Data Unit Shelf is not a requirement.

- 4) If the NT0X87AA is provisioned, provide two (2) Inverters (in positions 4 and 11) when the Modem Equipment Frame is equipped with two (2) Data Unit Shelves NT4X25DH (MD) and a separate power source is a requirement or when more than two Data Unit Shelves are equipped. (NT0X87AA Inverter is MD'd and replaced with NTRX31DH).
- 5) Always provide a LaMarche Inverter Isolation/mounting (ISG) Equipment kit (NTMX1665) for each LaMarche Inverter (A0367433) provided.
- 6) Only plugs J2, J3 and J4 may be assigned to equipment on the Modem Frame. Plug J1 has a given power output of approximately 170V AC and is intended to be used with a mechanical teletype which requires a greater power surge.
- 7) The number of stand alone data sets per inverter is determined by their total power consumption as listed below:

DEVICE	POWER CONSUMPTION
CTS 212AH	5.5 W
RIXON T212A	10.0 W
RIXON R212A	7.0 W
GDC Data Comm 4800	7.5 W
GDC 202T	10.0 W

- 8) Provide one (1) Local Cable Assembly NT0X0009 when an inverter (LaMarche or NT0X87AA) is provided in position 4. Provide one (1) Local Cable Assembly NT0X4306 when an inverter (LaMarche or NT0X87AA) is provided in position 11. These cables are provided to connect the inverter chassis to the logic return bar.

RUL9 1) Provision power cable assemblies as follows:

Config*	NT5X09AA (MD) Equipped in Position:	Provision Cable Assemblies:
P	18	NT0X4314, NT0X4315, NT0X4316, NT0X4317
P	52	NT0X4313, NT0X4316, NT0X4317

N	12 but not 52	NT0X4310, NT0X4312, NT0X4313, NT8X4802
N	12	NT0X4310, NT0X4312
	and 52	NT0X4313, NT0X4316
N	26 but not 66	NT0X4308, NT0X4309, NT0X8849, NT8X4801
N	26	NT0X4308, NT0X4309
	and 66	NT0X4307

*Config: P = Data Set Shelf equipped for modem pooling with a
Data Unit shelf

N = Data Set Shelf not equipped for modem pooling

RUL10 1) For field extensions provide one (1) each of wiring documents WD0X43BA and LWJ0X43BA.

RUL11 1) For field extensions provide four (4) A0288192 lugs per each NT0X87AA Inverter and two (2) A0288192 lugs per each NT5X09AA (MD) Data Set Shelf.

RUL12 1) Provide one (1) NTRX31DH Inverter and one (1) NT0X43XD IOE Inverter ISG Kit when 120 VAC (500 Watts) is required in the MOE frame.

228 DISK DRIVE PACKAGE

PEC CODE: NTZZ32GA

CPC CODE: B0234005

| RATING: MD

REPLACES: Not applicable

| REPLACED BY: NTZZ09UA

ABBREVIATION NAME: IOC

ENGINEERING DESCRIPTION: The NTZZ32GA package contains one 5.25 inch
(228.7 Mbyte) hard dis drive unit and asso-
ciated mounting hardware.

REFERENCE DOCUMENTATION: SLZZ32GA 00 02

MARKETS: Applicable markets:

US
Canada

ISSUE AUTHOR: NTI: Erica Keltner Dept. 3471 (PPK)

MAIN CONTACT: NTI: Erica Keltner Dept. 3471 (PPK)

NTZZ32GA EMC5-03-DDP-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 94 03 11 94 04 18	----- ECM 683 03 ECM 613 19	Previous history not available ET 45563 MD NTZZ32GA and replace with NTZZ09UA.

The NTZZ32GA is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
5.25" DDU (228.7 MB)	NT4X00AG		1	05	YY	AP
Mercury Disk Hardware Kit	NT4X0038		1	05	YY	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) YY can be CP position 10 or 18

RULES:

- AP 1) When PEC NTZZ32GA is ordered, these items are provided.

DISK DRIVE UNIT SHELF PACKAGE

PEC CODE: NTZZ32FA

CPC CODE: B0234004

| RATING: MD

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: DDU

ENGINEERING DESCRIPTION: The NTZZ32FA package contains the Disk Drive Unit Shelf and associated hardware to mount on the CIOE. The DDU functions as the office primary mass storage system.

REFERENCE DOCUMENTATION: SLZZ32FA 00 04
NTZZ32FA REL 04

MARKETS: Applicable markets:

US
Europe
Asia/Pacific
CALA

ISSUE AUTHOR: NTI: Bob Belvin Dept. 3471 (PPK)

MAIN CONTACT: NTI: Richard Mathias Dept. 3471 (PPK)

NTZZ32FA EMC5-03-DDU CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 94 04 18	----- ECM 613 19	Previous history not available Show NTZZ32GA as MD'd in flaglist and replaced by NTZZ09UA. MD and retire Section. NT4X00AF is MDd Per ECD 18-45271.
96 03 19	ECM 613 32	

The NTZZ32FA is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Disk Drive Unit Shelf	NT4X00AF	DDU	1	05		AP
Disk Drive Unit Assembly	NT4X0023		1	05		AP-01
# 228 MB Disk Drive	NTZZ32GA			05	10,18	RUL2
228 MB Disk Drive	NTZZ09UA			05	10,18	RUL2
Pwr Conv. (+-5V,+12V,+24V)	NT1X78AA		2	05	02,26	AP
Desig. Label (NT1X78AA)	P0668410		2	05	02,26	AP
Personality Plate (DDU)	P0726351		1	05		AP
Cable (DDU/Stratum to FSP)	NT6X0325		2	05		AP
Cable (DDU to FSP)	NT6X0329		2	05		AP
DDU Cable Braid Assembly	NT0X9501		1	05		AP
DDU Cable Braid Assembly	NT0X9537		1	05		AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

AP 1) When PEC NTZZ32FA is ordered, these items are provided.

- AP-01 1) This item is always provided with NT4X00AF and is shown here for completeness.
- RUL1 1) The NT4X00AF shelf is to be mounted in CIOE shelf position 05 only.
- RUL2 1) Provide a minimum one (1) maximum two (2) NTZZ09UA 228.7MB Disk Drive per NTZZ32FA as per customer requirements.

RUL3 1) Connect cables as indicated in the table below:

FROM					TO	
CABLES	QTY	SHELF	SHELF POS	CONN	BULKHEAD POSITION	CONN
NT6X0325	2	DDU	05	SCR	FSP (60)	TB1
NT6X0329	2			SCR		TB1

228MB DISK DRIVE

PEC CODE: NTZZ09UA

CPC CODE: B0233002

| RATING: MD

REPLACES: NTZZ32GA

REPLACED BY: Not Applicable

ABBREVIATION NAME: DDU

ENGINEERING DESCRIPTION: This block provides one 228MB hard disk drive and associated mounting hardware.

REFERENCE DOCUMENTATION: SLZZ09UA 00 02
NTZZ09UA REL 02

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

ISSUE AUTHOR: NTI: Bob Belvin Dept. 3471 (PPK)

MAIN CONTACT: NTI: Richard Mathias Dept. 3471 (PPK)

NTZZ09UA EMC5-03-DDU-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
94 04 08	ECM 683 04	Show that this EMS replaces NTZZ32GA.
95 09 25	ECM 613 30	ET 27599-Show a variable shelf mount position since the position varies from frame to cabinet.
96 03 19	ECM 613 32	Retire section. NT4X00AG is MD.

The 228MB Disk Drive is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
5.25" DDU (228.7 MB)	NT4X00AG		1	X	Y	AP
Mercury Disk Hardware Kit	NT4X0038		1	X	Y	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

AP 1) When PEC NTZZ09UA is ordered, these items are provided.

NOTE 1) Refer to the associated IOE frame and CIOE cabinet EMS's for the value of X.

2) Y = 10 for first NTZZ09UA assigned and 18 for the second NTZZ09UA.

380 MBYTE DPP ASSEMBLY

PEC CODE: NTZZ32CA

| CPC CODE: B0234001

RATING: MD

REPLACES: Not Applicable

REPLACED BY: NT8X48AD

ABBREVIATION NAME: DPP

ENGINEERING DESCRIPTION: The NTZZ32CA assembly contains a distributed processing peripheral, two 380 MByte disk drives, and the hardware required to mount this unit on a CIOE.

REFERENCE DOCUMENTATION: SLZZ32CA 00 01
NTZZ32CA REL 01

MARKETS: Applicable markets:

Canada
US
Europe
Asia/Pacific

| ISSUE AUTHOR: NTI: Bob Belvin Dept. 3471 (PPK)

| MAIN CONTACT: NTI: Richard Mathias Dept. 3471 (PPK)

NTZZ32CA EMC5-03-DPP-380 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 96 03 25	----- ECM 306 24	Previous history not available MD Section. NT8X48AD is rated A&M.

The NTZZ32CA is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Dist. Processor Peripheral	NT8X48AD	DPP	1	33		AP
EPROM (BCS29) CP	NT6M63CJ		2	A,B	2	AP
56 Kbps Compression I/F CP	NT6M94BA		2	A,B	7	AP
SCSI Disk Drive I/F CP	NT6M66BA		2	A,B	11	AP
SCSI Disk X-Over CP	NT6M93AA		2	A,B	15	AP
56K Crossover CP	NT6M48AA		1	B	16	AP
380 MByte Disk Drive	NT6M72DD		2	A,B	21	AP
56K Conn CP	NT6M54AL		1	B	26	AP
56K I/F Xover A Cable Assy	NT6M73AJ		1			AP
56K I/F Xover B Cable Assy	NT6M73AK		1			AP
56K I/F Conn Cable Assy	NT6M85CA		1			AP
Personality Plate (DPP)	P0729518		1	47		AP
25 Pin Filter Adapter	A0316594		7	33		AP
Mounting Hardware	A0317136		28	33		AP
Mounting Hardware	P0148330		14	33		AP
DPP/Bulkhead Cable	NTRX3330		1	33		AP
DPP/Bulkhead Cable	NTRX3331		1	33		AP
DPP/Bulkhead Cable	NTRX3332		2	33		AP
DPP/Bulkhead Cable	NTRX3333		2	33		AP
Cable Assembly 35"	NTNX69AB		1	33		AP
Connector	A0361663		1	33		AP
Hood	A0323869		1	33		AP
Cable Assembly	NTNX69AC		1	33		AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase.
Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if
they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

- AP 1) When PEC NTZZ32CA is ordered, these items are provided.
- RUL1 1) The Distributed Processor Peripheral (DPP) will allow remote polling of Automatic Message Accounting (AMA) in the DMS-100F per NTX243AA software package.
- 2) A DPP mounted in position 33 occupies mounting position 47 also.
- RUL2 1) One A0316594 25 Pin Filter Adapter, four A0317136 and two P0148330 (mounting hardware) are provided for each connector position on the DPP personality plate (P0729518) indicated in the table below:

Personality Plate ----- Filter Adapter	Shelf	Personality Plate Connector Position
P0729518 ----- A0316594	DPP	A J1, A J4, B J11-B J14, A J16

- RUL3 1) The cables provided herein shall be connected as indicated in the table below:

FROM					TO	
CABLES	QTY	SHELF	SHELF POS	CONN	BULKHEAD POSITION	CONN
NTRX3330	1	DPP	33	J1	47	A J1
NTRX3331	1			J4		A J4

NTRX3332	2			J11		B J11
				J12		B J12
NTRX3333	2			J13		B J13
				J14		B J14
NTNX69AB	1			J16		A J16
NTNX69AC	1			J16	FSP (60)	P&ALM 1 P&ALM 3

760 MBYTE DPP ASSEMBLY

PEC CODE: NTZZ32DA

| CPC CODE: B0234002

RATING: MD

REPLACES: N/A

REPLACED BY: NT8X48BD

ABBREVIATION NAME: DPP

ENGINEERING DESCRIPTION: The NTZZ32DA assembly contains a distributed processing peripheral, two 760 MByte disk drives, and the hardware required to mount this unit on a CIOE.

| REFERENCE DOCUMENTATION: SLZZ32DA 00 03
NTZZ32DA REL 03

MARKETS: Applicable markets:

Canada
US
Europe
Asia/Pacific

| ISSUE AUTHOR: NTI: Bob Belvin Dept. 3471 (PPK)

| MAIN CONTACT: NTI: Richard Mathias Dept. 3471 (PPK)

NTZZ32DA EMC5-03-DPP-760 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 96 03 25	----- ECM 306 24	Previous history not available MD Section. NT8X48AD is rated A&M.

The NTZZ32DA is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Dist. Processor Peripheral	NT8X48AD	DPP	1	33		AP
EPROM (BCS29) CP	NT6M63CJ		2	A,B	2	AP
56 Kbps Compression I/F CP	NT6M94BA		2	A,B	7	AP
SCSI Disk Drive I/F CP	NT6M66BA		2	A,B	11	AP
SCSI Disk X-Over CP	NT6M93AA		2	A,B	15	AP
56K Crossover CP	NT6M48AA		1	B	16	AP
760 MByte Disk Drive	NT6M72EA		2	A,B	21	AP
56K Conn CP	NT6M54AL		1	B	26	AP
56K I/F Xover A Cable Assy	NT6M73AJ		1			AP
56K I/F Xover B Cable Assy	NT6M73AK		1			AP
56K I/F Conn Cable Assy	NT6M85CA		1			AP
Personality Plate (DPP)	P0729518		1	47		AP
25 Pin Filter Adapter	A0316594		7	33		AP
Mounting Hardware	A0317136		28	33		AP
Mounting Hardware	P0148330		14	33		AP
DPP/Bulkhead Cable	NTRX3330		1	33		AP
DPP/Bulkhead Cable	NTRX3331		1	33		AP
DPP/Bulkhead Cable	NTRX3332		2	33		AP
DPP/Bulkhead Cable	NTRX3333		2	33		AP
Cable Assembly 35"	NTNX69AB		1	33		AP
Connector	A0361663		1	33		AP
Hood	A0323869		1	33		AP
Cable Assembly	NTNX69AC		1	33		AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

- AP 1) When PEC NTZZ32DA is ordered, these items are provided.
- RUL1 1) The Distributed Processor Peripheral (DPP) will allow remote polling of Automatic Message Accounting (AMA) in the DMS-100F per NTX243AA software package.
- 2) A DPP mounted in position 33 occupies mounting position 47 also.
- RUL2 1) One A0316594 25 Pin Filter Adapter, four A0317136 and two P0148330 (mounting hardware) are provided for each connector position on the DPP personality plate (P0729518) indicated in the table below:

Personality Plate ----- Filter Adapter	Shelf	Personality Plate Connector Position
P0729518 ----- A0316594	DPP	A J1, A J4, B J11-B J14, A J16

RUL3 1) The cables provided herein shall be connected as indicated in the table below:

FROM					TO	
CABLES	QTY	SHELF	SHELF POS	CONN	BULKHEAD POSITION	CONN
NTRX3330	1	DPP	33	J1	47	A J1
NTRX3331	1			J4		A J4
NTRX3332	2			J11		B J11
				J12		B J12
NTRX3333	2			J13		B J13
				J14		B J14
NTNX69AB	1			J16		A J16
NTNX69AC	1			J16	FSP (60) P&ALM 1 P&ALM 3	

I/O CONTROLLER MODULE PACKAGE

PEC CODE: NTZZ32EA

CPC CODE: B0234003

| RATING: MD.

REPLACES: Not Applicable

REPLACED BY: NTZZ32EB

ABBREVIATION NAME: IOC

ENGINEERING DESCRIPTION: The NTZZ32EA package contains the Input/Output Controller Module and associated hardware to mount on the CIOE. The IOC houses device controller cards each of which has its' own subsidiary MAP position.

REFERENCE DOCUMENTATION: SLZZ32EA 00 02
NTZZ32EA REL 02

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA

ISSUE AUTHOR: Erica Keltner Dept. 3471 (PPK)

MAIN CONTACT: Erica Keltner Dept. 3471 (PPK)

NTZZ32EA EMC5-03-IOC CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 95 02 03	----- ECM 613 26	Previous history not available MD NTZZ32EA and replace with NTZZ32EB as a result of EC 018-43363 which introduces the NT1X61AG IOC to replace NT1X61AD.

The NTZZ32EA is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
I/O Controller Module	NT1X61AD	IOC	1	19		AP
I/O Common CP Fill	NT1X61AE		1	19		AP
I/O Shelf Assembly	NT1X6112		1	19		AP-01
I/O Message Controller CP	NT1X62CA		1	19	02	AP
Desig. Label for NT1X62CA	P0686038		1	19	02	AP
Filler Face Plate 0.875	NT0X50AA		10	19	1, 5, 7, 9, 11, 13, 15, 17, 19, 21	AP-02
I/O Device Controller CP	As Req'd			19	4, 6, 8, 10, 12, 14, 16, 18, 20	RUL1
Filler Face Plate 0.875	NT0X50AA			19	4, 6, 8, 10, 12, 14, 16, 18, 20	RUL2
I/O Control Terminator	NT0X67AA		1	19	22	AP-02
Filler Face Plate 1.72	NT0X50AF		1	19	23	AP-02
Power Converter	NT2X70AE		1	19	25	AP
Desig. Label (NT2X70AE)	P0698943		1	19	25	AP
Personality Plate (IOC)	P0726316		1	33		AP
Personality Plate (IOC)	P0726317		1	19		AP
37 Pin Filter Adapter	A0316599		36	19		AP
Mounting Hardware	A0317136		144	19		AP
Mounting Hardware	P0148330		72	19		AP
IOC/Bulkhead Cable	NTRX3334		2	19		AP
IOC/Bulkhead Cable	NTRX3335		24	19		AP
IOC/Bulkhead Cable	NTRX3335			19		RUL4
IOC/Bulkhead Cable	NTRX3336		2	19		AP
IOC/Bulkhead Cable	NTRX3337		2	19		AP
IOC/FSP Cable	NTNX1620		1	19		AP
IOC/FSP Cable	NTNX1621		1	19		AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

- AP 1) When PEC NTZZ32EA is ordered, these items are provided.
- AP-01 1) This item is always provided with NT1X61AD and is shown here for completeness.
- AP-02 1) This item is always provided with NT1X61AE and is shown here for completeness.
- RUL1 1) A minimum of two I/O Controller Modules (IOC:00, IOC:01) are required per system.
- 2) Each shelf accommodates up to nine I/O device controller cards. Refer to EMA14-02-000 for provisioning of the IOC.
- 3) The IOC shelf and the devices (MTD, DDU, MAP etc.) it interfaces should be cabled to the same power feed on the Power Distribution Center (PDC).
- RUL2 1) When customer requirements specify that filler face plates are to be ordered, provide one (1) NT0X50AA for each location which is not to be equipped with an I/O device control card.
- RUL3 1) One A0316599 37 Pin Filter Adapter, four A0317136, and two P0148330 (mounting hardware) are provided herein for each

connector position on the IOC personality plates
(P0726316/P0726317) indicated in the table below:

Personality Plate	Shelf	Personality Plate Connector Position
Filter Adapter		
P0726316	IOC	C20 - C39
A0316599		
P0726317		C04 - C19
A0316599		

RUL4 1) Connect cables as indicated in the table below:

FROM					TO	
CABLES	QTY	SHELF	SHELF POS	CONN	BULKHEAD POSITION	CONN
NTRX3334	2	IOC	19	C00, C01	19	C00, C01
NTRX3335 (Note 1)	8			C04-C11		C04-C11
NTRX3335	24			C12-C19		C12-C19
				C20-C31 C34, C35 C38, C39	33	C20-C31 C34, C35 C38, C39
NTRX3336	2			C32, C33		C32, C33
NTRX3337	2			C36, C37		C36, C37
NTNX1620	1			SCR	FSP (60)	TB1
NTNX1621	1			SCR		TB1

Note 1: Provide eight (8) NTRX3335, IOC/Bulkhead Cable, per IOC. Do NOT provide these cables if DPP/MTD or DDU control cards are in slots 4 and/or slot 6 (C04-C07 Slot 4; C08-C11 Slot 6).

CIOE STRATUM II REMOTE OSCILLATOR SHELF

PEC CODE: NTZZ32HA

CPC CODE: B0234006

| RATING: MD

REPLACES: NTZZ37GM

| REPLACED BY: NTZZ32JN

ABBREVIATION NAME: ROS

ENGINEERING DESCRIPTION: The NTZZ32HA contains the Stratum II Remote Oscillator Shelf (ROS) and associated hardware for mounting in Cabinetized Input/Output Equipment (CIOE), Model A cabinets.

REFERENCE DOCUMENTATION: SLZZ32HA 00 03

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA

| ISSUE AUTHOR: Richard Mathias Dept. 3471 (PPK)

| MAIN CONTACT: Richard Mathias Dept. 3471 (PPK)

NTZZ32HA EMC5-03-ST1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
93 08 30	ECM 613 15	ET 112600 - MD NTZZ37GM which is a duplicate of NTZZ32HA and add mkt. and rules info to NTZZ32HA for International.
94 07 08	ECM 636 11	Correct AP items per ET 53313. Delete optional P0706920, replaced by AP item.
96 04 02	ECM 636 20	MD NTZZ32HA replace with NTZZ32JN.

The CIOE Stratum II Remote Oscillator Shelf is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Stratum II Rmt Osc. Shelf (DMS-Core, ISG)	NT3X95AB	ROS	1	05		AP
Remote Osc. Shelf Assy	NT3X9507		1	05		AP-01
Osc. (DMS-Core) & I/F CP	NT3X16AB		2	05	01, 15	AP-01
Osc. (DMS-Core) & I/F CP	NTZZ09PA			05	09	RUL1
Pwr Conv. (+-5V, +12V, +24V)	NT1X78AA		2	05	06, 20	AP-01
Filler Face Plate 2.62	NT0X50BE		3	05	09, 12, 23	AP-01
Filler Face Plate 1.72	NT0X50BF		3	05	04, 18, 26	AP-01
Filler Face Plate 0.875	NT0X50BA		1	05	14	AP-01
Desig. Strip (NT3X95AB)	P0699935		1	05		AP-01
Personality Plate (Stratum)	P0726321		1	05		AP
37 Pin Filter Adapter	A0316599		2	05		AP
Mounting Hardware	A0317136		8	05		AP
Mounting Hardware	P0148330		4	05		AP
Stratum/Bulkhead Cable	NTRX3325		1	05		AP
Stratum/Bulkhead Cable	NTRX3326		1	05		AP
Stratum/Bulkhead Cable	NT0X9551		6	05		AP
Cable (DDU/Stratum to FSP)	NT6X0325		2	05		AP
Stratum/FSP Cable	NTNX1697		2	05		AP
Boot	P0743593		6	05		AP
Boot	P0744811		2	05		AP
Bolt Cover	P0732389		8	05		AP
Insulator Cover	P0706920			05		RUL2

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase.
Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) One A0316599 37 Pin Filter Adapter, four A0317136 and two P0148330 (mounting hardware) are provided for each connector position on the Stratum personality plate (P0726321) as indicated in the table below:

Personality Plate	Shelf	Personality Plate Connector Position
Filter Adapter		
P0726321	STRATUM	C00, C01
A0316599		

- 2) Connect cables as indicated in the table below:

FROM					TO	
CABLES	QTY	SHELF	SHELF POS	CONN	BULKHEAD POSITION	CONN
NTRX3325	1	STRATUM 2/2.5	05	C001	05	C01
NTRX3326	1			C000		C00
NT0X9551	6			1A, 2A SPARE		1A, 2A 1A SPARE
				1B, 2B SPARE		1B, 2B 2A SPARE
NT6X0325	2			SCR	FSP (60)	TB1
NTNX1697	2			SCR		TB1

- 3) The Remote Oscillator Shelf requires two -48V feeds and two sets of alarm and control signals from the FSP.
- 4) The CIOE Model A cabinet must be adjacent to the Supernode cabinet. The ROS Shelf must be powered from the same CPDC as the Supernode cabinet.
- 5) The Remote Oscillator Shelf has two backplanes mounted on the same shelf. Backplane "A" is located at slot positions 1 through 14 and backplane "B" is located at slot positions 15 through 27. There is a power converter located at slot position 6 for backplane "A" and at slot position 20 for backplane "B".

RULES:

- AP 1) When PEC NTZZ32HA is ordered, these items are provided.
- | AP-01 1) These items are provided on NT3X95AB and are shown here for completeness.
- RUL1 1) If 'hot' spares are requested by the customer provide one (1) NTZZ09PA. If they are equipped, the filler face plates always provided in those positions must be discarded.

STRATUM 2.5 RMT OSC. SHELF

PEC CODE: NTZZ32JA

CPC CODE:

| RATING: MD

REPLACES: Not applicable

REPLACED BY: NTZZ32HN

ABBREVIATION NAME: ROS

ENGINEERING DESCRIPTION: The NTZZ32JA contains the Stratum 2.5 Oscillator Shelf and hardware. This clock provides a capability that is not Stratum rated; however, in terms of accuracy it falls in between Stratum II and Stratum III.

REFERENCE DOCUMENTATION: SLZZ32JA 00 02
NTZZ32JA REL 02

MARKETS: Applicable markets:

US
Canada
Asia/Pacific
Europe

| ISSUE AUTHOR: NT Richard Mathias Dept. 3471 (PPK)

| MAIN CONTACT: NT Richard Mathias Dept. 3471 (PPK)

NTZZ32JA EMC5-03-ST2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
96 03 27	ECM 600 22	MD NTZZ32JA building block.

The NTZZ32JA is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Stratum 2.5 Rmt Osc. Shelf (DMS-Core, ISG)	NT3X95BB	ROS	1	05		AP
Remote Osc. Shelf Assy	NT3X9507		1	05		AP-01
Osc. (DMS-Core) & I/F CP	NT3X16BB		2	05	01, 15	AP-01
Osc. (DMS-Core) & I/F CP	NTZZ09QA			05	09	RUL1
Pwr Conv. (+-5V, +12V, +24V)	NT1X78AA		2	05	06, 20	AP-01
Filler Face Plate 2.62	NT0X50BE		2	05	09, 23	AP
Filler Face Plate 2.62	NT0X50BE		1	05	12	AP-01
Filler Face Plate 1.72	NT0X50BF		3	05	04, 18, 26	AP-01
Desig. Strip (NT3X95BB)	P0699936		1	05		AP-01
Personality Plate (Stratum)	P0726321		1	05		AP
37 Pin Filter Adapter	A0316599		2	05		AP
Mounting Hardware	A0317136		8	05		AP
Mounting Hardware	P0148330		4	05		AP
Stratum/Bulkhead Cable	NTRX3325		1	05		AP
Stratum/Bulkhead Cable	NTRX3326		1	05		AP
Stratum/Bulkhead Cable	NT0X9551		6	05		AP
Cable (DDU/Stratum to FSP)	NT6X0325		2	05		AP
Stratum/FSP Cable	NTNX1697		2	05		AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

- AP 1) When PEC NTZZ32JA is ordered, these items are provided.
- AP-01 1) This item is provided on NT3X95BB and is shown here for completeness.
- RUL1 1) If 'hot' spares are requested by the customer provide one (1) NTZZ09QA. If they are equipped, the filler face plates always provided in those positions must be discarded.
- RUL2 1) One A0316599 37 Pin Filter Adapter, four A0317136 and two P0148330 (mounting hardware) are provided for each connector position on the Stratum personality plate (P0726321) as indicated in the table below:

Personality Plate ----- Filter Adapter	Shelf	Personality Plate Connector Position
P0726321 ----- A0316599	STRATUM	C00, C01

- RUL3 1) Connect cables as indicated in the table below:

FROM					TO	
CABLES	QTY	SHELF	SHELF POS	CONN	BULKHEAD POSITION	CONN
NTRX3325	1	STRATUM 2/2.5	05	C001	05	C01
NTRX3326	1			C000		C00
NT0X9551	6			1A, 2A SPARE		1A, 2A 1A SPARE
				1B, 2B SPARE		1B, 2B 2A SPARE

NT6X0325	2			SCR	FSP (60)	TB1
NTNX1697	2			SCR		TB1

CABINETIZED INPUT/OUTPUT EQUIPMENT

PEC CODE: NTZZ32AA

CPC CODE: B0233999

| RATING: MD

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: CIOE

ENGINEERING DESCRIPTION: The Cabinetized Input/Output Equipment houses all the input/output devices, mountable on a frame, that interface the MAP with the DMS machines.

REFERENCE DOCUMENTATION: SLZZ32AA 00 02
NTZZ32AA REL 02

MARKETS: Applicable markets:

US
Europe
Asia/Pacific
CALA

ISSUE AUTHOR: NTI: Bob Belvin Dept. 3471 (PPK)

MAIN CONTACT: Richard Mathias Dept. 3471 (PPK)

NTZZ32AA EMC5-03-001 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
94 04 18	ECM 613 19	Show NTZZ09UA as the provisional disk drive building block to NTZZ32FA.
94 07 22	ECM 561 01	EC 018-42674 Introduces the SCSI-DDU NT1X55FA that replaces the DDU, shelf and its Controller CP. Therefore, show NTZZ09UA and NTZZ32FA as rate change pending.
95 02 03	ECM 613 26	EC 018-43363 Drives the introduction of NT1X61AG into NTRX33AA. As a result NTZZ32EA is replaced by NTZZ32EB since a new BB is needed.
95 09 25	ECM 613 30	EC 018-45526 Introduces new NT8X48BD DPP into CIOE cabinet. EC 006-20826 introduces Enhanced Alarm Cables for the new NT8X48BD and NT8X48AD DPPs.
95 10 02	ECM 600 20	MD section per EC 024-94297

The Cabinetized Input/Output Equipment is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Cabinetized I/O Equipment	NTRX33AA		1			AP
2" Filler Panel	P0684448		1	65		AP-01
Frame Supervisory Panel	NTNX26MA	FSP	1	60		AP
Magnetic Tape Drive Assembly	NTZZ32BA	MTD		33		RUL1
#380 MBYTE DPP ASSEMBLY	NTZZ32CA	DPP		33		RUL3
#760 MBYTE DPP ASSEMBLY	NTZZ32DA	DPP		33		RUL3
Distrib. Processor Peripheral	NT8X48BD	DPP		33		RUL3
Personality Plate (DPP)	P0729518		1	47		RUL3
25 Pin Filter Adapter	A0316594		7	33		RUL3
Mounting Hardware	A0317136		28	33		RUL3
Mounting Hardware	P0148330		14	33		RUL3
DPP/Bulkhead Cable	NTRX3330		1	33		RUL3
DPP/Bulkhead Cable	NTRX3331		1	33		RUL3
DPP/Bulkhead Cable	NTRX3332		2	33		RUL3
DPP/Bulkhead Cable	NTRX3333		2	33		RUL3
Connector	A0361663		1	33		RUL3
Hood	A0323869		1	33		RUL3
Molded Cable Assembly	NT8M99AQ		1	33		RUL3
Power Cable Assembly	NT8M99AL		2	33		RUL3
#I/O Controller Module Package	NTZZ32EA	IOC		19		RUL2
I/O Controller Module Package	NTZZ32EB	IOC		19		RUL2
# Disk Drive Unit Shelf	NTZZ32FA	DDU		05		RUL7
# 228 MB Disk Drive	NTZZ09UA			05		RUL7
Stratum II Rmt Osc. Shelf (DMS-Core, ISG)	NTZZ32HA	ROS		05		RUL4
Stratum 2.5 Rmt Osc Shelf (DMS-Core, ISG)	NTZZ32JA	ROS		05		RUL6
Filler Panel	NT0X84AA			05		RUL5
Filler Panel	P0575239			33, 47		RUL5
Personality Plate (Blank)	P0715616			47		RUL10
Personality Plate (Blank)	P0726351			05		RUL10
Cooling Unit	NTNX27CA		1	00		AP
CIOE Door Label	P0726708		1			AP
EMI Kit (EMI Doors)	NTRX2516					RUL11

Retired Equipment
Cabinetized Input/Output Equipment

NTZZ32AA
EMC5-03-001
Page 3

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
EMI Ready Door Kit	NTRX2513					RUL11
Cable Trough Assembly	NTNX5511					RUL12
Leveling Foot Kit	NTRX2523					RUL13
Wiring Instructions	LWJRX33AA					RUL14
Wiring Option	NTRX33WA			19		RUL14
Wiring Option	NTRX33WB			19		RUL14
Frame/Logic Gnd Cluster Kit	NTRX2520		1			AP-01

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTZZ32FA	STD*	NT1X55FA
NTZZ09UA	STD*	NT1X55FA
NTZZ32EA	MD	NTZZ32EB
NTZZ32CA	STD*	NT8X48BD
NTZZ32DA	STD*	NT8X48BD

DEV - DEVELOPMENT. These products are in the development phase.
Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if
they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufac-
tured and cannot be ordered.

* Rate change pending. Check product availability.

NOTES:

RULES:

- AP 1) When PEC NTZZ32AA is ordered, these items are provided.
- 2) Each NTNX26MA, FSP, comes equipped with three NT0X36AB,
Power Control and Alarm cards.

- AP-01 1) This item is always provided with NTRX33AA and is shown here for completeness.
- RUL1 1) The standard DMS MTD is the Cook Electric drive, NT0X44AB.
- 2) If MTD is required, provide one (1) NTZZ32BA MTD Assembly.
- 3) The following cables are provided in the above MTD Assembly: Magnetic Tape Cable Assembly NTRX3320 and Cable Assembly NTRX3321.
- 4) An MTD mounted in position 33 occupies mounting position 47 also.
- RUL2 1) A minimum of two I/O Controller Modules (IOC:00, IOC:01) are required per system.
- 2) If provisioned as independent shelves then provide two (2) NTZZ32EB. Number these shelves IOC:00 and IOC:01.
- 3) Each shelf accommodates up to nine I/O device controller cards.
- 4) Provide one (1) NTZZ32EB I/O Controller Module Package for each additional nine I/O Device Controller Cards to be accommodated. Number these shelves IOC:02 and up.
- 5) The IOC shelf and the devices (MTD, DDU, etc.) it interfaces should be cabled to the same power feed on the Cabinetized Power Distribution Center (CPDC).
- 6) MTD/DPP (NT1X68AC) or DDU (NT1X55DA) controller cards can be assigned to only slot 4 or slot 6 of the IOC shelf in the CIOE. The cables from these slots to the bulkhead are not normally provided since the MTD/DDU/DPP are cabled directly to the IOC. While it is not recommended, use of these slots for other devices will require that cables (4 per slot) be provisioned. Therefore, IOC slots 4 and 6 should be reserved for MTD/DPP/DDU controllers if possible. The MTD,DPP or DDU connected to these slots must be inside the same Faraday cage of the CIOE or the adjacent CIOE.
- RUL3 1) The Distributed Processor Peripheral (DPP) will allow remote polling of Automatic Message Accounting (AMA) in the DMS-100F. Initial DPP units are now ordered by PEC NT8X48BD. Refer to ECM 306 and NT8X48BD EMS for detail ordering information of initial DPPs and upgrades to NT8X48BD.
- 2) For initial offices, additional hardware is required to mount the DPP in a CIOE Model A cabinet. For each DPP or-

dered, provide all hardware with the quantities listed above that have RUL3 against them. Existing offices that have the NT8X48AD DPP can order the NT8M99AQ cable assy separately to obtain enhanced alarm functionality.

- 3) A DPP mounted in position 33 occupies mounting position 47 also.

RUL4 1) Provide one (1) NTZZ32HA Stratum II Oscillator Shelf (remote shelf) when Stratum II feature is required in a DMS-Core ISG office.

- 2) The Remote Oscillator Shelf requires two -48V feeds and two sets of alarm and control signals from the FSP.

- 3) If Stratum II Remote Oscillator Shelf is job provisioned the following rules apply:

- a) The CIOE cabinet must be adjacent to the SuperNode cabinet.

- b) The ROS shelf must be powered from the same CPDC as the SuperNode cabinet.

- 4) The Remote Oscillator Shelf has two backplanes mounted on the same shelf. Backplane "A" is located at slot positions 1 through 14 and backplane "B" is located at slot positions 15 through 27. There is a power converter located at slot 6 for backplane "A" and at position 20 for backplane "B".

- 5) When ordering this shelf for field installation, provision 5 metres of NT-26CR (R0109836) wire coloured green.

RUL5 1) Provide one NT0X84AA filler when position 05 is not equipped and provide one P0575239 filler for each other position (33 or 47) that is not equipped.

RUL6 1) Provide one (1) NTZZ32JA Remote Oscillator DMS-Core Shelf when the DMS clock is to be equipped with DMS-Core applications.

- 2) The Remote Oscillator Shelf requires two -48V feeds and two sets of alarm and control signals from the FSP.

- 3) The CIOE must be located within 200 feet of the DMS-Core Message Switch Shelf.

- 4) The Remote Oscillator Shelf has two backplanes mounted on the same shelf. Backplane 'A' is located at slot positions 1 through 14 and backplane 'B' is located at slot positions

15 through 27. There is a power converter located at slot 6 for backplane 'A' and at position 20 for backplane 'B'.

- 5) When ordering this shelf for field installations, provide 5 meters of NT-26CR (R0109836) wire coloured green.

- RUL7
- 1) The NTZZ32FA DDU shelf is to be mounted in CIOE shelf position 05 only.
 - 2) Provide a minimum of one (1) maximum of two (2) NTZZ09UA 228MB Disk Drive Units per NTZZ32FA shelf.
 - 3) The 1st DDU shall be located on the left side (slot 10) of the NT4X00AF Dual Disk Drive shelf. If a 2nd DDU is required on the same shelf, it shall be located on the right side (slot 18).
 - 4) The NT1X55DA disk drive controller must be provisioned with the NT4X00AF (two controllers per shelf). If there are two DDUs, one controller (NT1X55) shall mount on IOC 0 and the other on IOC 1.
 - 5) In a disk office the Disk Drive Unit Shelf (DDU) replaces the MTD as the office primary mass storage system.
 - 4) The NTZZ32FA shelf, NTZZ09UA DDU and its Controller CP NT1X55DA are replaced by the SCSI Disk Drive Unit (SCSI-DDU) NT1X55FA which is a circuit pack mounted on the IOC shelf in any of the following nine (9) slot positions: 4, 6, 8, 10, 12, 14, 16, 18 and 20. Refer to TABLE B or T_IOC_BB_CP for provisioning of the SCSI DDU.

For initial jobs, provide the SCSI-DDU NT1X55FA when GA, as the DDU shelf on the CIOE cabinet is no longer provisioned. Refer to SCSI-DDU ECM for software restrictions. For field upgrades, remove the NT1X55DA and neighboring NT0X50AA filler face plate to mount the double size faceplate NT1X55FA circuit pack. The NT1X55FA mounts in the same slot as the NT1X55DA Controller CP. The cables connected to the associated ESDI-DDU and the DDU shelf should also be removed.

- RUL8
- 1) Provide Interlock Wiring for the Stratum II or Stratum 2.5 Remote Oscillator Shelf (NTZZ32HA/JA) when used with the DMS-Core and when the NTZZ32HA/JA shelf is mounted in position 05.

- RUL9
- 1) Reserved

- RUL10 1) Provide one P0715616 Blank Personality Plate in position 47 when that shelf position is not equipped.
- 2) Provide one P0726351 Blank Personality Plate in position 05 when that shelf position is not equipped.
- RUL11 1) Provide one NTRX2516, EMI Kit (EMI Doors), per cabinet for EMI compliant applications.
- 2) Provide one NTRX2513, EMI Ready Door Kit, per cabinet for EMI Ready applications
- RUL12 1) Provide one NTNX5511, Cable Trough Assembly, per cabinet when overhead cabling is required.
- RUL13 1) Provide one NTRX2523, Leveling Foot Kit, per cabinet for Non-Earthquake offices.
- RUL14 1) Provide one LWJRX33AA and one ADRX33AA drawing to assist the installer when provisionable shelves are to be field installed.
- 2) Provide one NTRX33WA, wiring option, per EVEN numbered CIOE when NTZZ32EB is ordered.
- 3) Provide one NTRX33WB, wiring option, per ODD numbered CIOE when NTZZ32EB is ordered.

97/12/09

EMC6

OFFICE ALARM VISUAL AND AUDIBLE EQUIPMENT CHAPTER AL

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OFFICE ALARM VISUAL AND AUDIBLE EQUIPMENT CHAPTER AL

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MERIDIAN BUSINESS SERVICES CHAPTER ALL

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EMC8

OPERATOR EQUIPMENT CHAPTER ALL

OPERATOR EQUIPMENT CHAPTER ALL

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OPERATOR EQUIPMENT CHAPTER ALL

EMC8-01-AAE	AUXILIARY ACCESS EQUIPMENT CABINET	NTZZ29BA
EMC8-01-ITPM	INTEGRATED TOPS POSITION MONITOR	NTZZ29DA
EMC8-01-MSA	UDS MODEM SHELF ASSEMBLY	NTZZ29MA
EMC8-01-MTP	MODULAR TOPS POSITION	NTZZ29CA
EMC8-01-MTP1	MODULAR TOPS POSITION	NTZZ29CB
EMC8-01-PCE	POSITION CONTROLLER EQUIPMENT CABINET	NTZZ29AA
EMC8-01-TPC	4 OPERATOR TPC SHELF	NTZZ29LA
EMC8-01-000	TOPS MULTI-PURPOSE POSITION SYSTEM	TOPS_MP
EMC8-02-DA-1	TOPS MPX TYPE 2 DA POSITION W/O MODEM	NTZZ29YA
EMC8-02-HSDA	HIGH SPEED DATA ACCESS	NTZZ29TA
EMC8-02-HSLA	HIGH SPEED LINE ACCESS	NTZZ29UA
EMC8-02-JA-1	TOPS MPX HEADSET JACK ASSEMBLY 6.5 FEET	NTZZ29ZA
EMC8-02-MPX-1	TYPE 1 TOPS MPX POSITION	NTZZ29QA
EMC8-02-MPX-10	TOPS MPX POSITION WITH NTN51FB	NTZZ36GA
EMC8-02-MPX-11	TOPS MPX POSITION BB WITH NTN51GB	NTZZ36FA
EMC8-02-MPX-12	TOPS MPX POSITION WITH NTN51FB	NTZZ36GB
EMC8-02-MPX-13	TOPS MPX POSITION BB W/ NTN51PB	NTZZ36GC
EMC8-02-MPX-14	TOPS MPX ISA POSITION W/OUT MONITOR	NTZZ36GE
EMC8-02-MPX-15	TOPS MPX POSITION BB W/ NTN51PB & NTN5	NTZZ36GD
EMC8-02-MPX-16	TOPS MPX ISA POSITION (HP XM3)	NTZZ36GF
EMC8-02-MPX-17	TOPS MPX ISA POSITION (HP XM4)	NTZZ36GG
EMC8-02-MPX-18	TOPS IWS ISA POSITION (HP XM4) 75MHZ	NTZZ36GH
EMC8-02-MPX-2	TYPE 2 TOPS MPX POSITION	NTZZ29RA
EMC8-02-MPX-3	TYPE 3 TOPS MPX POSITION	NTZZ29SA
EMC8-02-MPX-4	TOPS MPX TYPE 3 TA/DA POSITION	NTZZ29SB
EMC8-02-MPX-5	TOPS MPX TYPE 1 TA/DA POSITION W/O MODEM	NTZZ29XB
EMC8-02-MPX-6	TOPS MPX TYPE 2 TA/DA POSITION W/O MODEM	NTZZ29YB
EMC8-02-MPX-7	FRENCH MPX TYPE 1 POS	NTZZ36BA
EMC8-02-MPX-8	FRENCH MPX TYPE 2 POS	NTZZ36CA
EMC8-02-MPX-9	FRENCH MPX TYPE 3 POS	NTZZ36DA
EMC8-02-PRT-1	TI RO PRINTER	NTZZ29WA
EMC8-02-TA-1	TOPS MPX TYPE 1 TA/DA POSITION W/O MODEM	NTZZ29XA
EMC8-02-TPC	4 OPERATOR TPC SHELF (SCSI)	NTZZ29VA
EMC8-02-UPG	486 UPGRADE KIT FOR NTN51CB/CC/CD/DB/DC	NTZZ99AP
EMC8-02-UPG-1	486 UPGRADE KIT FOR NTN51CB/CC/CD/DB/DC	NTZZ99AT
EMC8-02-UPG-2	486 UPGRADE KIT FOR NTN51CB/CC/CD/DB/DC	NTZZ99BT
EMC8-02-UPG-3	486 UPGRADE KIT FOR NTN51CB/CC/CD/DB/DC	NTZZ99CT
EMC8-02-000	TOPS MULTI-PURPOSE EXTENDED SYSTEM	TOPS_MPX
EMC8-02-001	TOPS MPX MIS FRAME (CANADA ONLY)	NTZZ15GA
EMC8-02-002	TOPS MPX IBM DA AOSS POSITION EQUIPMENT	IBM_DA_AOSS
EMC8-02-003	TOPS MPX NT DA AOSS POSITION EQUIPMENT	NT_DA_AOSS
EMC8-02-004	TOPS MPX IWS POSITION EQUIPMENT	MPX_IWS
EMC8-02-005	TOPS MPX IWS RELEASE 02 MCA POSITION EQU	MPX_IWS_R2_MCA
EMC8-02-006	TOPS MPX IWS POSITION EQUIPMENT	MPX_IWS_R2

97/12/09

AUXILIARY ACCESS EQUIPMENT CABINET

PEC CODE: NTZZ29BA

CPC CODE: N/A

| RATING: MD

REPLACES: N/A

| REPLACED BY: TOPS IWS (Intelligent Workstation)

ABBREVIATION NAME: AAE

ENGINEERING DESCRIPTION: The Auxiliary Access Equipment (AAE) Cabinet is to be used for TOPS MP support equipment only. The AAE Cabinet houses up to 5 Modem Shelves and a Power Distribution Panel (PDP).

REFERENCE DOCUMENTATION: SLZZ29BA 00 01
NTZZ29BA REL 01

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

| ISSUE AUTHOR: NTI: Dawn Yost Dept. 3471 (PPK)

| MAIN CONTACT: NTI: Dawn Yost Dept. 3471 (PPK)

NTZZ29BA EMC8-01-AAE CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
92 11 09	ECM 606 05	ET 15279 - Correct PEC code of 56K modem.
93 04 16	ECM 606 09	Add Dual HSDA feature.
97 03 04	ECM 606 20	TOPS MP product MDed by EC 018-49251. NTZZ29BA cancelled by EC 018-49251. Several PECs were MDed by this EC. See Equipment flagged table for more details.

The Auxiliary Access Equipment Cabinet is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
# Auxiliary Access Equipment	NTNX57AC		1			AP
4" Filler Panel	P0688213		1	63		AP-01
UDS Modem Shelf	62005220		1	57		AP-01
UDS 212A Modem Card	62125086			57	1-16	RUL1
Filler Plate	P0687530		1	49		AP-01
# UDS Modem Shelf Assembly	NTZZ29MA			51,42, 33,24		RUL2
UDS D56 Modem Card	64565007			51,42, 33,24	1-16	RUL3
Modem Filler Assembly	NTZZ29NA			42,33, 24		RUL5
# Power Distribution Panel	NTNX24CB		1	05		AP-01
Alarm and Converter Drive	NT0X91AA		1	05		AP-02
# Alarm CP (for Dual HSDA)	NT0X91AG		1	05		RUL7
# PC Kit for Dual HSDA	NTNX5717		1			RUL7
Hazard Plate Assembly	NTNX5707		1	00		AP-01
# SL-100 Cabinet	NTNX25BA		1			AP-01
P.D.P. Designation Strip	P0690932		1			RUL4
P.D.P. Designation Strip	P0690933		1			RUL4
# AAE Bulkhead Assy	NTNX5708		1			AP-01
End Panel Assy, Right	NTNX2531		1			AP-01
End Panel Assy, Left	NTNX2532		1			AP-01
Isolation Pad	P0688332		2			AP
Right Front Door Assy	NTNX2536		1			AP
Left Front Door Assy	NTNX2538		1			AP
# Right Rear Door Assy	NTNX2527		1			AP
Left Rear Door Assy	NTNX2529		1			AP
UDS Modem SH Spare Power Sup	65001860					RUL6

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTNX57AC	MD	No replacement.
NTNX24CB	MD	No replacement.
NT0X91AG	MD	No replacement.
NTNX5717	MD	No replacement.
NTNX25BA	MD	No replacement.
NTNX5708	MD	No replacement.
NTNX2527	MD	No replacement.
NTZZ29MA	MD	No replacement.

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

- AP 1) When PEC NTZZ29BA is ordered, these items are provided.
- AP-01 1) This PEC is always provided with NTNX57AC and is included for completeness.
- AP-02 1) This PEC is always provided with NTNX24CB and is included for completeness.
- RUL1 1) Provide one 62125086 UDS 212A Modem card for each TPC shelf equipped in the PCE cabinet.
- RUL2 1) NTZZ29MA UDS Modem Shelf Assemblies are assigned according to the configuration (stand-alone, integrated TMS, or dual HSDA), application (DA, ORDB), and number of PCE frames. Use the rules below.

For a stand-alone configuration, provision a modem shelf in position 42 for ORDB. For DA, provision a modem shelf in position 33 for PCE 0 and 1, and another modem shelf in position 24 for PCEs 2 and 3.

For an integrated TMS configuration, provision a modem shelf in position 33 for PCE 0 and 1, and another modem shelf in position 24 for PCE 2 and 3.

For Dual HSDA configurations (field application only), provision modem shelves in position 51 and 42, in addition to the modem shelf/shelves provisioned for TMS in position(s) 33/24. For Dual HSDA, modem shelves are needed in BOTH position 42 and 51, regardless of the number of PCEs supported by the AAE.

RUL3 1) Stand-alone Configurations (no TMS in office):

One (1) D56 modem is required for each HSDA mounted in slot 8 of TPC shelves (to support the Operator Reference Database (ORDB) feature). These modems mount on the modem shelf in position 42 of the AAE. Two (2) D56 modems are required for each HSDA CP mounted in slot 13 of TPC shelves (to support DA). These modems mount on the shelves in positions 33 (for PCE 0,1) and 24 (for PCE 2,3) of the AAE.

2) Integrated TMS Configurations:

Two (2) D56 modems are required for each TPC. These modems connect to an HSDA mounted in slot 13 of the TPC. These modems mount on shelves 33 (for PCE 0,1) and 24 (for PCE 2,3), and provide communication to the TMS.

3) Dual HSDA Configurations (Field Application Only):

In addition to the two (2) D56 modems required for HSDA CPs mounted in slot 13 (which handle communication to the TMS), two D56 modems are required for each HSDA mounted in slot 8. These modems mount in shelf positions 51 and 42. Each HSDA has one modem on shelf 51 and one modem on shelf 42. The HSDA CPs mounted in slot 8 allow direct communication to the CCI/NAS DA database, rather than routing this data through the TMS.

RUL4 1) Provide one each P.D.P Designation strips P0690932 and P0690933 ONLY for the second AAE Cabinet in a lineup.

RUL5 1) Provide one (1) NTZZ29NA Modem Filler Assembly for each un-equipped modem shelf position.

- RUL6 1) Provide one (1) or more UDS Modem Shelf Spare Power Supply per Customer request.
- RUL7 1) Provide one (1) Dual HSDA PC Kit and one (1) Alarm CP per AAE configured for Dual HSDA. Field application only.

INTEGRATED TOPS POSITION MONITOR

PEC CODE: NTZZ29DA

| CPC CODE: B0233302

| RATING: MD

| REPLACES: n/a

| REPLACED BY: NTZZ29CB

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: Integrated TOPS Position Monitor

REFERENCE DOCUMENTATION: SLZZ29DA 00 01
NTZZ29DA REL 01

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

| ISSUE AUTHOR: NTI: David Keilson Dept. 3471 (PPK)

| MAIN CONTACT: NTI: David Keilson Dept. 3471 (PPK)

NTZZ29DA EMC8-01-ITPM CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 94 02 22	----- ECM 606 11	Previous history not available MD this building block.

The Integrated TOPS Position Monitor is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
TOPS MP Terminal Base Unit	NT0M90SA		1			AP
Monitor	NT0M92FA		1			AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

AP 1) When PEC NTZZ29DA is ordered, these items are provided.

UDS MODEM SHELF ASSEMBLY

PEC CODE: NTZZ29MA

CPC CODE: N/A

| RATING: MD

REPLACES: Not Applicable

| REPLACED BY: TOPS IWS (Intelligent Workstation)

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: UDS Modem Shelf Assembly

REFERENCE DOCUMENTATION: SLZZ29MA 00 01
NTZZ29MA REL 01

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

| ISSUE AUTHOR: NTI: Dawn Yost Dept. 3471 (PPK)

| MAIN CONTACT: NTI: Dawn Yost Dept. 3471 (PPK)

NTZZ29MA EMC8-01-MSA CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
97 03 04	ECM 606 20	TOPS MP product MDed by EC 018-49251. NTZZ29MA cancelled by EC 018-49251. Several PECs were MDed by this EC. See Equipment flagged table for more details.

The UDS Modem Shelf Assembly is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
UDS Modem Shelf	62005220		1	XX		AP
# Mounting Hardware Kit	NTNX57AD		1	XX		AP

EQUIPMENT FLAGGED '#' :

PEC	RATING	REPLACED BY PEC
NTNX57AD	MD	No replacement.

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

AP 1) When PEC NTZZ29MA is ordered, these items are provided.

1) XX = 42, 33 or 24

MODULAR TOPS POSITION

NTZZ29CA

RATING: MD

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: Modular TOPS Position

REFERENCE DOCUMENTATION: SLZZ29CA 00 01

NTZZ29CA REL 01

The Modular TOPS Position is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
TOPS MP Terminal Base Unit	NT0M90SA		1			AP
Monitor	NT0M92FA		1			AP
Modular Headset Jack Assy	NTNX5303		2			AP

RULES:

AP 1) When PEC NTZZ29CA is ordered, these items are provided.

MODULAR TOPS POSITION

PEC CODE: NTZZ29CB

CPC CODE: N/A

RATING: MD

REPLACES: Not Applicable

| REPLACED BY: TOPS IWS (Intelligent Workstation)

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: Modular TOPS Position

REFERENCE DOCUMENTATION: SLZZ29CB 00 01
NTZZ29CB REL 01

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

| ISSUE AUTHOR: NTI: Dawn Yost Dept. 3471 (PPK)

| MAIN CONTACT: NTI: Dawn Yost Dept. 3471 (PPK)

NTZZ29CB EMC8-01-MTP1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
97 03 04	ECM 606 20	TOPS MP product MDed by EC 018-49251. NTZZ29CB cancelled by EC 018-49251. Several PECs were MDed by this EC. See Equipment flagged table for more details.

The Modular TOPS Position is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
# TOPS MP Terminal Base Unit	NT0M90SA		1			AP
# Monitor	NT0M92FA		1			AP

EQUIPMENT FLAGGED '##':

PEC	RATING	REPLACED BY PEC
NT0M90SA	MD	No replacement.
NT0M92FA	MD	No replacement.

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

AP 1) When PEC NTZZ29CB is ordered, these items are provided.

POSITION CONTROLLER EQUIPMENT CABINET

PEC CODE: NTZZ29AA

CPC CODE: N/A

| RATING: MD

REPLACES: Not Applicable

| REPLACED BY: TOPS IWS (Intelligent Workstation)

ABBREVIATION NAME: PCE

ENGINEERING DESCRIPTION: The Position Controller Equipment (PCE) Cabinet houses up to four TOPS Position Controllers (TPCs). One PCE can support a maximum of 16 Operator Positions.

REFERENCE DOCUMENTATION: SLZZ29AA 00 02
NTZZ29AA REL 02

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

| ISSUE AUTHOR: NTI: Dawn Yost Dept. 3471 (PPK)

| MAIN CONTACT: NTI: Dawn Yost Dept. 3471 (PPK)

NTZZ29AA EMC8-01-PCE CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
92 11 09	ECM 606 05	ET 14099 - Correct provisioning of filler faceplates on TPC shelf
93 04 16	ECM 606 09	Add Dual HSDA feature.
97 03 04	ECM 606 20	TOPS MP product MDed by EC 018-49251. NTZZ29AA cancelled by EC 018-49251. Several PECs were MDed by this EC. See Equipment flagged table for more details.

The Position Controller Equipment Cabinet is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
# Pos'n Controller Equipment	NTNX60AA		1			AP
# Frame Supervisory Panel	NTNX26CA		1	60		AP-01
FSP Alarm CP	NT6X36AA		1	60		AP-02
Fan Sensor Alarm CP	NT6X36AC		1	60		AP-02
# TPC Shelf Assy	NTNX6101		4	XX		AP-01
# 4 Operator TPC Shelf	NTZZ29LA			XX		RUL1
# 4 Operator TPC Shelf (SCS1)	NTZZ29VA			XX		RUL1
# High Speed Data Access	NTZZ29TA			XX	8, 13	RUL2
# High Speed Line Access	NTZZ29UA			XX	9-12	RUL3
Filler Face Plate	NT0X50AE			XX	1, 17, 21, 25	RUL1
# Aluminum Shield CP	NTNX54BA			XX	4	RUL1
Filler Face Plate	NT0X50AA			XX	5-16, 20, 24	RUL1
Filler Face Plate	NT0X50AA			XX	8, 13	RUL2
Filler Face Plate	NT0X50AA			XX	9-12	RUL3
Desig. Label (NT0X50AA)	P0578498			XX		RUL4
Desig. Label (NT0X50AE)	P0591361			XX		RUL4
# Cooling Unit	NTNX27BA		1	00		AP-01
# SL-100 Cabinet	NTNX25BA		1			AP-01
# PCE EMI Bulkhead Assy	NTNX6022		1			AP-01
Isolation Pad	P0688332		2			AP
FCC Label	P0634844		1			AP
Right Front Door Assy	NTNX2536		1			AP
Left Front Door Assy	NTNX2538		1			AP
# Right Rear Door Assy	NTNX2527		1			AP
Left Rear Door Assy	NTNX2529		1			AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTNX60AA	MD	No replacement.
NTNX26CA	MD	No replacement.
NTNX6101	MD	No replacement.
NTNX54BA	MD	No replacement.
NTNX27BA	MD	No replacement.
NTNX25BA	MD	No replacement.
NTNX6022	MD	No replacement.
NTNX2527	MD	No replacement.
NTZZ29VA	MD	No replacement.
NTZZ29TA	MD	No replacement.
NTZZ29UA	MD	No replacement.
NTZZ29LA	MD	NTZZ29VA

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES: 1) "XX" can be one of 05, 19, 33, 47.

RULES:

AP 1) When PEC NTZZ29AA is ordered, these items are provided.

AP-01 1) This PEC is always provided with the NTNX60AA and is included for completeness.

AP-02 1) This PEC is always provided with the NTNX26CA and is included for completeness.

RUL1 1) Provide one NTZZ29VA per each four operator positions required. The NTZZ29VA replaces the NTZZ29LA which has a status of MD.

- 2) Provision fourteen (14) NT0X50AA Filler Face Plates, four (4) NT0X50AE Filler Face Plates, and one (1) NTN54BA Aluminum Shield CP for each shelf on which the TPC Pack Fill is not provided.

- RUL2 1) Configuration of the NTZZ29TA is based on the software features provided:

Feature	Pack Configuration
Non-TMS	
Operator Reference Database	(1) NTZZ29TA in slot 8
Directory Assistance	(1) NTZZ29TA in slot 13
Integrated TMS	(1) NTZZ29TA, slot 13 only
Dual HSDA	(2) NTZZ29TA in slots 8, 13

- 2) Provision one (1) NT0X50AA for each slot (8,13) that is not equipped.

- RUL3 1) Provide one (1) NTZZ29UA per operator position.
- 2) Provide NT0X50AA Filler Face Plates for each slot position 9-12 not filled with a NTZZ29UA.

- RUL4 1) Provide one (1) Designation Label for each Filler Face Plate provisioned. A designation label for the NTN54BA is not available.

4 OPERATOR TPC SHELF

PEC CODE: NTZZ29LA

CPC CODE: B0233309

| RATING: MD

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: 4 Operator TPC Shelf

REFERENCE DOCUMENTATION: SLZZ29LA 00 01
NTZZ29LA REL 01

MARKETS: Applicable markets:

US
Canada
Europe
Asia/Pacific
CALA

ISSUE AUTHOR: NT: Richard Mathias Dept. 3471 (PPK)

MAIN CONTACT: NT: Richard Mathias Dept. 3471 (PPK)

NTZZ29LA EMC8-01-TPC CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
95 12 01	ECM 606 17	MD NTZZ29LA per MD Team

The 4 Operator TPC Shelf is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
TPC Pack Fill	NTNX61AE		1	XX		AP
Aluminum Shield CP	NTNX54BA		1	XX	4	AP-01
Single Board Computer CP	NTNX64AA		1	XX	6	AP-01
4 Megabyte Memory CP	NTNX63AB		1	XX	7	AP-01
Parallel Input/Output CP	NTNX65AA		1	XX	14	AP-01
Filler Face Plate	NT0X50AA		3	XX	15, 16, 20	AP-01
Floppy Disk and Control CP	NTNX68AA		1	XX	17-19	AP-01
Hard Drive and Control CP	NTNX68BA		1	XX	21-23	AP-01
TOPS EMI Shield/Load CP	NTNX67BA		1	XX	24	AP-01
Power Converter CP	NT2X70AE		2	XX	1, 25	AP
Desig. Label (NT2X70AE)	P0698943		2	XX	1, 25	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) XX = 05, 19, 33 or 47

RULES:

- AP 1) When PEC NTZZ29LA is ordered, these items are provided.

AP-01 1) This PEC is included with NT1X61AE and is included for completeness.

TOPS MULTI-PURPOSE POSITION SYSTEM

PEC CODE: TOPS_MP

CPC CODE: N/A

| RATING: MD

REPLACES: N/A

| REPLACED BY: TOPS IWS (Intelligent Workstation)

ABBREVIATION NAME: TOPS MP

ENGINEERING DESCRIPTION: The TOPS MP system is configured using the following frames and equipment to provide Toll and Assist, Directory Assistance or Operator Reference Database functions, depending on customer requirements.

REFERENCE DOCUMENTATION: MSNX51AA 00 08

MARKETS: Applicable markets:

Canada
US
CALA
Europe
Asia/Pacific

| ISSUE AUTHOR: NTI: Dawn Yost Dept. 3471 (PPK)

| MAIN CONTACT: NTI: Dawn Yost Dept. 3471 (PPK)

TOPS MP EMC8-01-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 01 15	ECM 606 07	MD NTZZ29WA (TI R0 Printer)
94 02 22	ECM 606 11	Add position labels and stand-alone modems. Change to latest EMS format. Add change kits and keyboards to equipment list. Add straight blade power cord. MD Desk and Integrated TOPS MP position. MD NTZZ29ZA headset jack assembly.
97 03 04	ECM 606 20	TOPS MP product MDed by EC 018-49251. TOPS_MP cancelled by EC 018-49251. Several PECs were MDed by this EC. See Equipment flagged table for more details.

The TOPS Multi-Purpose Position System is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
# Position Controller Equip.	NTZZ29AA					RUL1
Right End Panel	NTNX2531					RUL1
Left End Panel	NTNX2532					RUL1
Adjacent Frame Attach H/W	NTNX2544					RUL1
Adjacent Frame EMI H/W	NTNX2545					RUL1
# Auxiliary Access Equipment	NTZZ29BA					RUL2
# Modular TOPS Position	NTZZ29CA					RUL3
# Modular TOPS Position	NTZZ29CB					RUL3
Straight Blade Power Cord	NT0M96FC					RUL3
# Headset Jack Assy 6.5 Ft	NTZZ29ZA					RUL3
Headset Jack Assy 10 Ft	NTZZ36AA					RUL3
# Integrated TOPS Posn Monitor	NTZZ29DA					RUL3
# TOPS Adjustable Desk	NP154					RUL3
# Ground Bar	NTNX5305					RUL3
# English Universal Keyboard	NT0M36AE					RUL3
French Universal Keyboard	NT0M36AA					RUL3
English IBM DA Keyboard	NT0M36AH					RUL3
# Keyboard (TELMEX DA)	NT4X81EA					RUL3
# Keyboard (English TA only)	NT4X81DA					RUL3
Change Kit	NT0M36AF					RUL3
Change Kit	NT0M96QE					RUL3
Change Kit	NT0M36AK					RUL3
# Change Kit	NT4X81EB					RUL3
Cabinet Top Cable Trough	NTNX55AA					RUL4
Cable Trough Cover Plates	NTZZ29EA					RUL4
Cable Trough End Cover	NTZZ29FA					RUL4
Cabinet Raised Floor Anchor	NTNX56AA					RUL5
Furniture Concrete Flr Anchr	NTNX56BA					RUL5
Furniture Raised Flr Anchor	NTNX56CA					RUL5
Cabinet Concrete Floor NonEQ	NTZZ29JA					RUL5
Cab Concrete Flr EQ Zone 1-3	NTZZ29GA					RUL5
Cab Concrete Flr EQ Zone 4-7	NTZZ29HA					RUL5
T.A.M.I. Position						RUL6
Computer Based Training Sys	NTZZ29KA					RUL7

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
# TI R0 Printer	NTZZ29WA					RUL6
Modular (Teledapt) Adapter	A0355018					RUL8
Floor Mounting Template	P0696402					RUL9
Aisle Line Up Label	P0696219					RUL10
Position Numbering Labels						RUL11
- (Pos. #0000 - #0071)	P0709162					
- (Pos. #0072 - #0143)	P0709163					
- (Pos. #0144 - #0215)	P0709164					
- (Pos. #0216 - #0287)	P0709165					
- (Pos. #0288 - #0359)	P0709166					
- (Pos. #0360 - #0431)	P0709167					
- (Pos. #0432 - #0503)	P0709168					
- (Pos. #0504 - #0575)	P0709169					
- (Pos. #0576 - #0647)	P0709170					
- (Pos. #0648 - #0719)	P0709171					
- (Pos. #0720 - #0791)	P0709172					
- (Pos. #0792 - #0863)	P0709173					
- (Pos. #0864 - #0935)	P0709174					
- (Pos. #0936 - #1007)	P0709175					
- (Pos. #1008 - #1023)	P0709176					
Stand-alone 202 S/T Modem						RUL12
Stand-alone 108 Modem						RUL13

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTZZ29AA	MD	No replacement.
NTZZ29BA	MD	No replacement.
NTZZ29CB	MD	No replacement.
NTNX5305	MD	No replacement.
NT0M36AE	MD	No replacement.
NT4X81EA	MD	No replacement.
NT4X81EB	MD	No replacement.
NTZZ29CA	MD	NTZZ29CB
NTZZ29ZA	MD	NTZZ36AA
NTZZ29DA	MD	No replacement.
NP154	MD	No replacement.
NT4X81DA	MD	NT0M36AE
NTZZ29WA	MD	see RUL6 & ECM 607

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) The TOPS MP Adjustable Desk (now MD) was equipped with a Headset Jack.

RULES:

- RUL1
- 1) One NTZZ29AA Position Controller Equipment (PCE) Cabinet provides from one to sixteen TOPS positions.
 - 2) Line ups are limited to a minimum of one and a maximum of four PCE cabinets per line up and per AAE cabinet.
 - 3) One cabinet width spacing is required between the PCE and AAE frames.
 - 4) End Panels must be provisioned on each end of the PCE line up. Provide one NTNX2531 Right End panel (oriented by facing circuit pack side) per PCE line up. Provide one NTNX2532 Left End panel (oriented same) per PCE line up.
 - 5) Provide the NTNX2544 kit for attaching adjacent frames internal to the line up. Provide four (4) kits per adjacent frame for a non-earthquake site and six (6) kits per adjacent frame for an earthquake site.
 - 6) Provide the NTNX2545 kit for EMI contact hardware per each adjacent frame internal to the line up. One set per adjacent frame.
- RUL2
- 1) Provide one (1) AAE frame for each PCE line-up. A line-up may contain up to four (4) PCE frames.
- RUL3
- 1) The TOPS MP Adjustable Desk and the Integrated TOPS Position (which included the desk) are MD. Therefore, all po-

sitions must be provided as modular positions. For each position required, order one (1) NTZZ29CB.

- 2) With each position, provide one (1) headset jack assembly building block (NTZZ36AA). This includes two headset jack assemblies.
- 3) With each TOPS position, provision one (1) of the following Keyboards:

EITHER one (1) NT0M36AE English Universal Keyboard
OR one (1) NT0M36AA French Universal Keyboard
OR one (1) NT0M36AH English IBM DA Keyboard
OR one (1) NT4X81EA Keyboard (TELMEX DA)

- 4) Up to eight TOPS positions, and up to sixteen of the last positions can have their ground connections chained together. Provide one (1) NTN5305 Ground Bar Assembly for each chain of positions. The maximum is 128 positions, or 16 chains of eight positions each.
- 5) Change Kit NT0M36AF is available to convert a NT4X81DA keyboard to NT0M36AE equivalence. The keyboard produced by applying NT0M36AF to an NT4X81DA will be known as NT4X81DB (B0229511) and is functionally the same as the NT0M36AE keyboard but uses different artwork internally.
- 6) Change Kit NT0M96QE is available to convert a NT0M90NA Controller to NT0M90SA, which includes the digital telephony circuit board.
- 7) Change Kit NT0M36AK is available to convert a NT0M36AE Keyboard to a NT0M36AH Keyboard.
- 8) Change Kit NT4X81EB is available to convert a NT0M36AE Keyboard to a NT4X81EA Keyboard. When the NT4X81EB change kit is applied to the NT0M36AE, the result will be a direct equivalent to the NT4X81EA. The NT4X81EA is for TELMEX.
- 9) The TOPS MP position includes a twist-lock power cord. Order one straight blade power cord per position if requested by the customer.

- RUL4 1) Provide one NTN55AA per PCE frame or AAE frame when overhead cable routing method is applied. Total height of cabinet and cable trough is 7 ft.

- 2) Ceiling ladder rack method is recommended for cable routing from the PCE to the AAE and for cross aisle runs.
- 3) Provide one (1) NTZZ29EA Cable Trough Cover Plates to cover the gap (front and back) between two adjacent NTN55AA cable troughs.
- 4) Provide one (1) NTZZ29FA Cable Trough End Cover for covering the cable trough at the end of a line up.

- RUL5 1) Provide appropriate Anchor Assemblies from the following list to suit the application:

Qty	PEC	Application
4	NTNX56AA	Raised Floor Anchor Assembly for Cabinets
4	NTNX56BA	Concrete Anchor Assembly for Furniture
4	NTNX56CA	Raised Floor Anchor Assembly for Furniture
1	NTZZ29GA	Concrete Anchor Assembly for Cabinets in an earthquake zone 1-3.
1	NTZZ29HA	Concrete Anchor Assembly for Cabinets in an earthquake zone 4-7.
1	NTZZ29JA	Concrete Anchor Assembly for Cabinets in a non-earthquake zone.

- RUL6 1) The T.A.M.I. position equipment may be customer supplied. The VDU is a VT100 compatible terminal with a 212 A/D compatible modem. If NT is to supply the TAMI position equipment, refer to ECM 607 for a VDU and printer, and ECM 633 for a modem.

- RUL7 1) Provide NTZZ29KA Computer Based Training (C.B.T.) System per customer requirements. One system will support up to sixteen (16) operator positions.

- RUL8 1) Provision one (1) A0355018 Modular (Teledapt) Adapter per 8 positions.

- RUL9 1) Provide one (1) floor mounting template P0696402 for new sites or as required for pre-installation floor planning.

- RUL10 1) Provide cabinet aisle designations P0696219 for PCE 0-7 and AAE 0-1.

- RUL12 1) Provide two (2) sets of labels, choosing the range of position numbers to suit job requirements. The second set allows the customer to label spares when replacing failed equipment.

- RUL13 1) Provide one stand-alone 202 S/T modem for each SADS, FADS, TADS, HADS, NOTIS SNAC, QMFADS, QFADS or QTADS printer operating at 1200 baud. Refer to ECM 633 for modem ordering information.
- RUL15 1) Provide one stand-alone 108 modem for each SADS, FADS, TADS, HADS, NOTIS, SNAC, QMFADS, QFADS, QTADS, Voice Quote, Auto Voice Quote or Record printer operating at 300 baud. Refer to ECM 633 for modem ordering information.

TOPS MPX TYPE 2 DA POSITION W/O MODEM

NTZZ29YA

RATING: MD

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: TOPS MPX Type 2 DA Position w/o Modem

REFERENCE DOCUMENTATION: SLZZ29YA 00 02
NTZZ29YA REL 02

The TOPS MPX Type 2 DA Position w/o Modem is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
TOPS MPX Position (Type 2)	NTNX51DC		1			AP
MPX Audio Card	NTNX51BC		1			AP
Keyboard Template	P0714192		1			AP

RULES:

AP 1) When PEC NTZZ29YA is ordered, these items are provided.

HIGH SPEED DATA ACCESS

PEC CODE: NTZZ29TA

CPC CODE: N/A

| RATING: MD

REPLACES: Not Applicable

| REPLACED BY: TOPS IWS (Intelligent Workstation)

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: High Speed Data Access

REFERENCE DOCUMENTATION: SLZZ29TA 00 01
NTZZ29TA REL 01

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

| ISSUE AUTHOR: NTI: Dawn Yost Dept. 3471 (PPK)

| MAIN CONTACT: NTI: Dawn Yost Dept. 3471 (PPK)

NTZZ29TA EMC8-02-HSDA CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
97 03 04	ECM 606 20	TOPS MP product MDed by EC 018-49251. NTZZ29TA cancelled by EC 018-49251. Several PECs were MDed by this EC. See Equipment flagged table for more details.

The High Speed Data Access is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
# High Speed Data Access CP	NTNX66AA		1	XX	YY	AP
Desig Label (NTNX66AA)	P0703453		1	XX	YY	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTNX66AA	MD	No replacement.

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

AP 1) When PEC NTZZ29TA is ordered, these items are provided.

1) XX = 05, 19, 33 or 47

2) YY = 08 or 13

HIGH SPEED LINE ACCESS

PEC CODE: NTZZ29UA

CPC CODE: N/A

| RATING: MD

REPLACES: Not Applicable

| REPLACED BY: TOPS IWS (Intelligent Workstation)

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: High Speed Line Access

REFERENCE DOCUMENTATION: SLZZ29UA 00 01
NTZZ29UA REL 01

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

| ISSUE AUTHOR: NTI: Dawn Yost Dept. 3471 (PPK)

| MAIN CONTACT: NTI: Dawn Yost Dept. 3471 (PPK)

NTZZ29UA EMC8-02-HSLA CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
97 03 04	ECM 606 20	TOPS MP product MDed by EC 018-49251. NTZZ29UA cancelled by EC 018-49251. Several PECs were MDed by this EC. See Equipment flagged table for more details.

The High Speed Line Access is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
# High Speed Line Access CP	NTNX62AB		1	XX	YY	AP
Desig Label (NTNX62AB)	P0703452		1	XX	YY	AP

EQUIPMENT FLAGGED '##':

PEC	RATING	REPLACED BY PEC
NTNX62BC	MD	No replacement.

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

AP 1) When PEC NTZZ29UA is ordered, these items are provided.

1) XX = 05, 19, 33 or 47

2) YY = 09, 10, 11 or 12

TOPS MPX HEADSET JACK ASSEMBLY 6.5 FEET

PEC CODE: NTZZ29ZA

| CPC CODE: B0235033

| RATING: MD

| REPLACES: N/A

| REPLACED BY: NTZZ36AA (TOPS MP) or NTZZ36EA (TOPS MPX)

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: TOPS MPX Headset Jack Assembly 6.5 Feet

REFERENCE DOCUMENTATION: SLZZ29ZA 00 01
NTZZ29ZA REL 01

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

| ISSUE AUTHOR: NTI: David Keilson Dept. 3471 (PPK)

| MAIN CONTACT: NTI: David Keilson Dept. 3471 (PPK)

NTZZ29ZA EMC8-02-JA-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
94 02 22	ECM 606 11	MD this building block.

The TOPS MPX Headset Jack Assembly 6.5 Feet is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Headset Jack Assembly	NTNX5306		2			AP
Spacer	P098D178		1			AP
Screw	P0113616		1			AP
Washer	P0286117		1			AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

AP 1) When PEC NTZZ29ZA is ordered, these items are provided.

| TYPE 1 TOPS MPX POSITION

NTZZ29QA

RATING: MD

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: TOPS MPX Position

REFERENCE DOCUMENTATION: SLZZ29QA 00 01
NTZZ29QA REL 01

The Type 1 TOPS MPX Position is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
TOPS MPX Position (Type 1)	NTNX51CB		1			AP
Data Set Unit (UDS D56)	64565005		1			AP
Headset Jack Assembly	NTNX5306		2			AP
MPX Audio Card	NTNX51BC		1			AP
Keyboard Template	P0714192		1			AP
Spacer	P098D178		1			AP
Screw	P0113616		1			AP
Washer	P0286117		1			AP

RULES:

AP 1) When PEC NTZZ29QA is ordered, these items are provided.

| TOPS MPX POSITION WITH NTN51FB

PEC CODE: NTZZ36GA

CPC CODE: B0239091

| RATING: MD

| REPLACES: NTZZ29XB/NTZZ29YB/NTZZ29SB/NTZZ36FA

| REPLACED BY: NTZZ36GB

ABBREVIATION NAME: n/a

| ENGINEERING DESCRIPTION: The NTZZ36GA includes the NTN51FB (Model 57) position, which has a 486 processor, 106 MB disk, and 8 MB RAM. It has five slots for plug-in cards, and includes the NTN51LC (9518) monitor.

| REFERENCE DOCUMENTATION: MSNX51BA 00 16
SLZZ36GA 00 01

MARKETS: Applicable markets:

US
Canada
Europe
CALA

ISSUE AUTHOR: NTI: David Keilson Dept. 3471 (PPK)

MAIN CONTACT: NTI: David Keilson Dept. 3471 (PPK)

NTZZ36GA EMC8-02-MPX-10 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 06 26	API 317 03	Introduction of NTN51FB position/ NTZZ36GA building block.
93 07 20	ECM 606 10	Initial release with ECM. Change title and rating.
94 02 22	ECM 606 11	MD this building block.

The TOPS MPX Position with NTNX51FB is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
TOPS MPX Position	NTNX51FB		1			AP
69X8138 Token Ring CP	A0602526		1		04	AP
TOPS MPX Digital Audio Card	NTNX51BD		1		05	AP
Cbl Mgmt Brkt for NTNX51FB	NTNX5122		1			AP
Color Monitor 9518	NTNX51LC		1			AP
T.R. Data Cbl, Posn-Junc Box	A0385644		1			AP
Voice Cbl, Posn-Junc Box	NT0R82AB		1			AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) NTZZ29SB/XB/YB include the keyboard and RTIC card (NTZZ29XB/YB only). These items are NOT included with the NTZZ36GA, and must be provisioned.

RULES:

- AP 1) When PEC NTZZ36GA is ordered, these items are provided.

TOPS MPX POSITION BB WITH NTN51GB

PEC CODE: NTZZ36FA

CPC CODE: B0238765

| RATING: MD

REPLACES: n/a

REPLACED BY: NTZZ36GA

ABBREVIATION NAME: n/a

ENGINEERING DESCRIPTION: The NTZZ36FA includes the NTN51GB position, which has a 486 processor, 106 MB disk, and 8 MB RAM. It has three slots for plug-in cards.

REFERENCE DOCUMENTATION:

MARKETS: Applicable markets:

US
Canada
Europe
CALA

ISSUE AUTHOR: NTI: David Keilson Dept. 3471 (PPK)

MAIN CONTACT: NTI: David Keilson Dept. 3471 (PPK)

NTZZ36FA EMC8-02-MPX-11 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 05 10	API 317 02	Introduction of NTN51GB in BB.
93 06 26	API 317 03	Modify per new EMS template.
93 07 23	ECM 684 01	Initial release with ECM. Change title.
94 02 28	ECM 684 02	MD this building block.

The TOPS MPX POSITION BB WITH NTNX51GB is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
TOPS MPX Position	NTNX51GB		1			AP
Token Ring CP	A0368911		1		02	AP-01
Digital Telephony Audio Card	NTNX51BD		1		03	AP
TOPS MPX PS/2 Bracket Assy	NTNX5153		1			AP
Color Monitor 8512	NTNX51LA		1			AP
T.R. Data Cbl, Posn-Junc Box	A0385644		1			AP
Voice Cbl, Posn-Junc Box	NT0R82AB		1			AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) NTZZ29SB/XB/YB include the RTIC card (NTZZ29XB/YB only) and keyboard. These items are NOT included with the NTZZ36FA, and must be provisioned.

RULES:

AP 1) When PEC NTZZ36FA is ordered, these items are provided.

AP-01 This item is always provided when NTNX51GB is ordered.

TOPS MPX POSITION WITH NTN51FB

PEC CODE: NTZZ36GB

CPC CODE: B0240659

| RATING: MD

REPLACES: NTZZ36GA

| REPLACED BY: NTZZ36GC

ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION: The NTZZ36GB includes the NTN51FB (Model 57) position, which has a 486 processor, 106 MB disk, and 8 MB RAM. It has five slots for plug-in cards, and includes the NTN51LD (9524) monitor.

| REFERENCE DOCUMENTATION: MSNX51BA 00 18
SLZZ36GB 00 01

| MARKETS: Applicable markets:

|
US
Canada
CALA

ISSUE AUTHOR: NTI: David Keilson Dept. 3471 (PPK)

MAIN CONTACT: NTI: David Keilson Dept. 3471 (PPK)

NTZZ36GB EMC8-02-MPX-12 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 02 22	ECM 606 11	Introduction of NTZZ36GB position building block. This building block was created because of the new monitor (NTNX51LD).
94 09 16	ECM 606 13	MD this BB.

The TOPS MPX POSITION WITH NTN51FB is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
TOPS MPX Position	NTNX51FB		1			AP
69X8138 Token Ring CP	A0602526		1		04	AP
TOPS MPX Digital Audio Card	NTNX51BD		1		05	AP
Cbl Mgmt Brkt for NTN51FB	NTNX5122		1			AP
Color Monitor 9524	NTNX51LD		1			AP
T.R. Data Cbl, Posn-Junc Box	A0385644		1			AP
Voice Cbl, Posn-Junc Box	NT0R82AB		1			AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

AP 1) When PEC NTZZ36GB is ordered, these items are provided.

TOPS MPX POSITION BB W/ NTN51PB

PEC CODE: NTZZ36GC

CPC CODE: B0241135

| RATING: MD

REPLACES: NTZZ36GB

| REPLACED BY: NTZZ36GD

ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION: The NTZZ36GC includes the NTN51PB (Model 57) position, which has a 486 processor, 540 MB disk, and 8 MB RAM.

REFERENCE DOCUMENTATION: MSNX51BA 00 18
SLZZ36GC 00 01

MARKETS: Applicable markets:

US
Canada
CALA

| ISSUE AUTHOR: NTI: Richard Mathias Dept. 3471 (PPK)

| MAIN CONTACT: NTI: Richard Mathias Dept. 3471 (PPK)

NTZZ36GC EMC8-02-MPX-13 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 09 16	ECM 606 13	Introduction of NTZZ36GC position building block. This building block was created because of the new position (NTNX51PB).
95 10 04	ECM 695 06	MD NTZZ36GC due to depleted stock of NTNX51BD.

The TOPS MPX POSITION BB W/ NTNX51PB is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
TOPS MPX Position	NTNX51PB		1			AP
69X8138 Token Ring CP	A0602526		1		04	AP
TOPS MPX Digital Audio Card	NTNX51BD		1		05	AP
Cbl Mgmt Brkt Model 57	NTNX5122		1			AP
Color Monitor 9524	NTNX51LD		1			AP
T.R. Data Cbl, Posn-Junc Box	A0385644		1			AP
Voice Cbl, Posn-Junc Box	NT0R82AB		1			AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

AP 1) When PEC NTZZ36GC is ordered, these items are provided.

TOPS MPX ISA POSITION W/OUT MONITOR

PEC CODE: NTZZ36GE

CPC CODE: B0242721

| RATING: MD

REPLACES: NTZZ36GD

| REPLACED BY: NTZZ36GF

ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION: The NTZZ36GE includes the NTN51NB (ISA) position, which has a 486 processor, 540 MB disk, and 8 MB RAM.

REFERENCE DOCUMENTATION: MSNX51BA 00 22
SLZZ36GE 00 01

MARKETS: Applicable markets:

US
Canada

ISSUE AUTHOR: NTI: Bob Belvin Dept. 3471 (PPK)

MAIN CONTACT: NTI: Richard Mathias Dept. 3471 (PPK)

NTZZ36GE EMC8-02-MPX-14 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
95 07 11	ECM 695 05	Introduction of NTZZ36GE ISA Position building block.
96 03 04	ECM 695 08	MD section per ECD 011-21758. HP no longer able to supply.

The TOPS MPX ISA POSITION W/OUT MONITOR is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
TOPS MPX ISA Position	NTNX51NB		1			AP
ISA Token Ring Card	A0619543		1			AP
TOPS MPX ISA Audio Card	NTNX52BC		1			AP
Universal Wiring Duct	P0803055		1			AP
T.R. Data Cbl, Posn-Junc Box	A0385644		1			AP
Voice Cbl, Posn-Junc Box	NT0R82AB		1			AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

AP 1) When PEC NTZZ36GE is ordered, these items are provided.

TOPS MPX POSITION BB W/ NTNX51PB & NTNX51BE

PEC CODE: NTZZ36GD

CPC CODE: B0241426

| RATING: MD

REPLACES: Not Applicable

REPLACED BY: Not Applicable

ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION: The NTZZ36GD includes the NTNX51PB (Model 57) position, which has a 486 processor, 540 MB disk, and 8 MB RAM. It includes the NTNX51BE Audio card, which is required for some Release 02 features.

REFERENCE DOCUMENTATION: MSNX51BA 00 19
SLZZ36GD 00 01

MARKETS: Applicable markets:

US
Canada
CALA

ISSUE AUTHOR: NT: Bob Belvin Dept. 3471 (PPK)

MAIN CONTACT: NT: Richard Mathias Dept. 3471 (PPK)

NTZZ36GD EMC8-02-MPX-15 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 09 21	ECM 695 01	Introduction of NTZZ36GD position building block. This building block was created because of the new Audio card (NTNX51BE).
95 10 04	ECM 695 06	Remove Europe from market.
95 10 27	ECM 695 07	Replace NTNX5122 Cable Management Bracket with P0803055 Universal Wiring Duct.
96 03 04	ECM 695 08	MD and retire section, ECD 011-21758.

The TOPS MPX POSITION BB W/ NTNX51PB & NTNX51BE is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
TOPS MPX Position	NTNX51PB		1			AP
69X8138 Token Ring CP	A0602526		1		04	AP
TOPS MPX Digital Audio Card	NTNX51BE		1		05	AP
# Cbl Mgmt Brkt Model 57	NTNX5122		1			AP
Universal Wiring Duct	P0803055		1			AP
Color Monitor 9524	NTNX51LD		1			AP
T.R. Data Cbl, Posn-Junc Box	A0385644		1			AP
Voice Cbl, Posn-Junc Box	NT0R82AB		1			AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTNX5122	MD	P0803055

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

AP 1) When PEC NTZZ36GD is ordered, these items are provided.

TOPS MPX ISA POSITION (HP XM3)
W/OUT MONITOR

PEC CODE: NTZZ36GF

CPC CODE: B0245776

| RATING: MD

REPLACES: NTZZ36GE

| REPLACED BY: NTZZ36GG

ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION: The NTZZ36GF includes the NTNX51RB (ISA) position, which has a 75MHZ Pentium processor, 420MB disk, and 8 MB RAM.

REFERENCE DOCUMENTATION: MSNX51BA 00 22
SLZZ36GF 00 01

MARKETS: Applicable markets:

US
Canada

ISSUE AUTHOR: NTI: Bob Belvin Dept. 3471 (PPK)

MAIN CONTACT: NTI: Richard Mathias Dept. 3471 (PPK)

NTZZ36GF EMC8-02-MPX-16 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
96 03 04	ECM 695 08	Introduction of NTZZ36GF ISA Position building block per ECD 011-21758.
96 04 03	ECM 695 09	MD NTZZ36GF. HP cannot supply.

The TOPS MPX ISA POSITION (HP XM3) W/OUT MONITOR is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
TOPS MPX ISA Position	NTNX51RB		1			AP
ISA Token Ring Card	A0619543		1			AP
TOPS MPX ISA Audio Card	NTNX52BC		1			AP
Universal Wiring Duct	P0803055		1			AP
T.R. Data Cbl, Posn-Junc Box	A0385644		1			AP
Voice Cbl, Posn-Junc Box	NT0R82AB		1			AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

AP 1) When PEC NTZZ36GF is ordered, these items are provided.

TOPS MPX ISA POSITION (HP XM4)
75MHZ PENTIUM, W/O MONITOR

PEC CODE: NTZZ36GG

CPC CODE: B0246190

| RATING: MD

REPLACES: NTZZ36GE/F

| REPLACED BY: NTZZ36HA

ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION: The NTZZ36GG includes the NTN51TB (ISA) position, which has a 75MHZ Pentium processor, 8 MB RAM and a 840MB disk.

REFERENCE DOCUMENTATION: MSNX51BA 00 22
SLZZ36GG 00 01

MARKETS: Applicable markets:

US
Canada

| ISSUE AUTHOR: NTI: Dawn Yost Dept. 3471 (PPK)

| MAIN CONTACT: NTI: Dawn Yost Dept. 3471 (PPK)

NTZZ36GG EMC8-02-MPX-17 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
96 04 03	ECM 695 09	Introduction of NTZZ36GG ISA Position building block per ECD 011-21842. MDing of building block NTZZ36GG per EC 024-98592. This EC is MDing the NTNX51TB HP position. The position is being replaced by an Intel position, NTNX51VB. This building block is being replaced by NTZZ36HA.
97 09 19	ECM 695 18	

The TOPS MPX ISA POSITION (HP XM4) 75MHZ PENTIUM, W/O Monitor is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
# TOPS MPX ISA Position	NTNX51TB		1			AP
ISA Token Ring Card	A0619543		1			AP
TOPS MPX ISA Audio Card	NTNX52BC		1			AP
Universal Wiring Duct	P0803055		1			AP
T.R. Data Cbl, Posn-Junc Box	A0385644		1			AP
Voice Cbl, Posn-Junc Box	NT0R82AB		1			AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTNX51TB	MD	NTNX51VB

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

AP 1) When PEC NTZZ36GG is ordered, these items are provided.

TOPS IWS ISA POSITION (HP XM4) 75MHZ
PENTIUM, W/O MONITOR, W/ PCI AUDIO CARD

PEC CODE: NTZZ36GH

CPC CODE: B0249222

| RATING: MD

REPLACES: N/A

REPLACED BY: NTZZ36HB

ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION: The NTZZ36GH includes the NTN51TB (ISA) position, which has a 75MHZ Pentium processor, 8 MB RAM, a 840MB disk and the PCI Audio Card.

REFERENCE DOCUMENTATION: MSNX51BA 00 22
SLZZ36GG 00 01

MARKETS: Applicable markets:

US
Canada

ISSUE AUTHOR: NTI: Dawn Yost Dept. 3471 (PPK)

MAIN CONTACT: NTI: Dawn Yost Dept. 3471 (PPK)

NTZZ36GH EMC8-02-MPX-18 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
97 05 23	ECM 695 16	Introduction of NTZZ36GH ISA Position building block with the PCI Audio Card per ECD 011-22039.
97 09 19	ECM 695 18	MDing of building block NTZZ36GH per EC 024-98592. This EC is MDing the NTNX51TB HP position. The position is being replaced by an Intel position, NTNX51VB. This building block is being replaced by NTZZ36HB.

The TOPS IWS ISA POSITION (HP XM4) 75MHZ PENTIUM, W/O Monitor, W/ PCI Audio Card is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
# TOPS MPX ISA Position	NTNX51TB		1			AP
ISA Token Ring Card	A0619543		1			AP
TOPS MPX PCI Audio Card	NTNX52CC		1			AP
Universal Wiring Duct	P0803055		1			AP
T.R. Data Cbl, Posn-Junc Box	A0385644		1			AP
Voice Cbl, Posn-Junc Box	NT0R82AB		1			AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTNX51TB	MD	NTNX51VB

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) This building block and the ISA RTIC Card (A0619552) should be used in all international installations with direct G.703 audio connections and RS-422 data connections to the E1 channel bank.

RULES:

- AP 1) When PEC NTZZ36GH is ordered, these items are provided.

| TYPE 2 TOPS MPX POSITION

NTZZ29RA

RATING: MD

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: Type 2 TOPS MPX Position.

REFERENCE DOCUMENTATION: SLZZ29RA 00 01
NTZZ29RA REL 01

The Type 2 TOPS MPX Position is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
TOPS MPX Position (Type 2)	NTNX51CC		1			AP
Data Set Unit (UDS D56)	64565005		1			AP
Headset Jack Assembly	NTNX5306		2			AP
MPX Audio Card	NTNX51BC		1			AP
Keyboard Template	P0714192		1			AP
Spacer	P098D178		1			AP
Screw	P0113616		1			AP
Washer	P0286117		1			AP

RULES:

AP 1) When PEC NTZZ29RA is ordered, these items are provided.

| TYPE 3 TOPS MPX POSITION

NTZZ29SA

RATING: MD

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: Type 3 TOPS MPX Position

| REFERENCE DOCUMENTATION: | SLZZ29SA 00 02
| NTZZ29SA REL 02

The Type 3 TOPS MPX Position is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
TOPS MPX Position (Type 3)	NTNX51DD		1			AP
MPX Audio Card	NTNX51BC		1			AP
Keyboard Template	P0714192		1			AP

RULES:

AP 1) When PEC NTZZ29SA is ordered, these items are provided.

TOPS MPX TYPE 3 TA/DA POSITION

PEC CODE: NTZZ29SB

| CPC CODE: B0235030

| RATING: MD

| REPLACES: NTZZ29SA

| REPLACED BY: NTZZ36GA

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: TOPS MPX Type 3 TA/DA Position

REFERENCE DOCUMENTATION: SLZZ29SB 00 02
NTZZ29SB REL 02

MARKETS: Applicable markets:

Canada
US

| ISSUE AUTHOR: NTI: David Keilson Dept. 3471 (PPK)

| MAIN CONTACT: NTI: David Keilson Dept. 3471 (PPK)

NTZZ29SB EMC8-02-MPX-4 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
93 02 22	ECM 606 08	Add market information.
94 02 22	ECM 606 11	MD this building block.

The TOPS MPX Type 3 TA/DA Position is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
TOPS MPX Position (Type 3)	NTNX51DD		1			AP
MPX Audio Card	NTNX51BD		1			AP
Keyboard Template	P0714192		1			AP
TOPS MPX PS2 Bracket	NTNX5153		1			AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

AP 1) When PEC NTZZ29SB is ordered, these items are provided.

TOPS MPX TYPE 1 TA/DA POSITION W/O MODEM

PEC CODE: NTZZ29XB

| CPC CODE: B0235029

| RATING: MD

| REPLACES: NTZZ29XA

| REPLACED BY: NTZZ36GA

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: TOPS MPX Type 1 TA/DA Position w/o Modem

REFERENCE DOCUMENTATION: SLZZ29XB 00 02
NTZZ29XB REL 02

MARKETS: Applicable markets:

Canada
US

| ISSUE AUTHOR: NTI: David Keilson Dept. 3471 (PPK)

| MAIN CONTACT: NTI: David Keilson Dept. 3471 (PPK)

NTZZ29XB EMC8-02-MPX-5 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
93 02 22	ECM 606 08	Add market information.
94 02 22	ECM 606 11	MD this building block.

The TOPS MPX Type 1 TA/DA Position w/o Modem is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
TOPS MPX Position (Type 1)	NTNX51DB		1			AP
MPX Audio Card	NTNX51BD		1			AP
Keyboard Template	P0714192		1			AP
TOPS MPX PS2 Bracket	NTNX5153		1			AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

AP 1) When PEC NTZZ29XB is ordered, these items are provided.

TOPS MPX TYPE 2 TA/DA POSITION W/O MODEM

PEC CODE: NTZZ29YB

| CPC CODE: B0235028

| RATING: MD

| REPLACES: NTZZ29YA

| REPLACED BY: NTZZ36GA

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: TOPS MPX Type 2 TA/DA Position w/o Modem

REFERENCE DOCUMENTATION: SLZZ29YB 00 02
NTZZ29YB REL 02

MARKETS: Applicable markets:

Canada
US

| ISSUE AUTHOR: NTI: David Keilson Dept. 3471 (PPK)

| MAIN CONTACT: NTI: David Keilson Dept. 3471 (PPK)

NTZZ29YB EMC8-02-MPX-6 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
93 02 22	ECM 606 08	Add market information.
94 02 22	ECM 606 11	MD this building block.

The TOPS MPX Type 2 TA/DA Position w/o Modem is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
TOPS MPX Position (Type 2)	NTNX51DC		1			AP
MPX Audio Card	NTNX51BD		1			AP
Keyboard Template	P0714192		1			AP
TOPS MPX PS2 Bracket	NTNX5153		1			AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

AP 1) When PEC NTZZ29YB is ordered, these items are provided.

FRENCH MPX TYPE 1 POS

NTZZ36BA

| RATING: MD No replacement.

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: French MPX Type 1 Pos

REFERENCE DOCUMENTATION: SLZZ36BA 00 01

MARKETS: Applicable markets:

Canada
Europe

NTZZ36BA EMC8-02-MPX-7 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 93 02 22	----- ECM 606 08	Previous history not available MD this EMS - was never manufactured

The French MPX Type 1 Pos is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
TOPS MPX Position (Type 1)	NTNX51EB		1			AP
MPX Audio Card	NTNX51BD		1			AP
Keyboard Template	P0714192		1			AP
TOPS MPX PS2 Bracket	NTNX5153		1			AP

NOTES:

RULES:

AP 1) When PEC NTZZ36BA is ordered, these items are provided.

FRENCH MPX TYPE 2 POS

NTZZ36CA

| RATING: MD No replacement.

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: French MPX Type 2 Pos

REFERENCE DOCUMENTATION: SLZZ36CA 00 01

MARKETS: Applicable markets:

Canada
Europe

NTZZ36CA EMC8-02-MPX-8 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 93 02 22	----- ECM 606 08	Previous history not available MD this EMS - was never manufactured

The French MPX Type 2 Pos is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
TOPS MPX Position (Type 1)	NTNX51EC		1			AP
MPX Audio Card	NTNX51BD		1			AP
Keyboard Template	P0714192		1			AP
TOPS MPX PS2 Bracket	NTNX5153		1			AP

NOTES:

RULES:

AP 1) When PEC NTZZ36CA is ordered, these items are provided.

FRENCH MPX TYPE 3 POS

NTZZ36DA

| RATING: MD No replacement.

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: French MPX Type 3 Pos

REFERENCE DOCUMENTATION: SLZZ36DA 00 01

MARKETS: Applicable markets:

Canada
Europe

NTZZ36DA EMC8-02-MPX-9 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 93 02 22	----- ECM 606 08	Previous history not available MD this EMS - was never manufactured

The French MPX Type 3 Pos is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
TOPS MPX Position (Type 1)	NTNX51ED		1			AP
MPX Audio Card	NTNX51BD		1			AP
Keyboard Template	P0714192		1			AP
TOPS MPX PS2 Bracket	NTNX5153		1			AP

NOTES:

RULES:

AP 1) When PEC NTZZ36DA is ordered, these items are provided.

TI RO PRINTER

NTZZ29WA

RATING: MD Replaced by NTZZ14EB or NTZZ14EC

ABBREVIATION NAME: NTZZ29WA

ENGINEERING DESCRIPTION: The TI RO Printer provides a printer for use with TOPS office reporting features such as Voice Quote and Record TTY.

REFERENCE DOCUMENTATION: N/A

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

NTZZ29WA EMC8-02-PRT-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 01 15	ECM 606 07	ET15519 - MD NTZZ29WA (TI RO Printer),

The TI R0 Printer is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
TI-810 R0 Printer	ITEM_103		1			AP
TI-810 Terminal Stand	ITEM_610		1			AP
TI-810 Stand Mtd Paper Tray	ITEM_611		1			AP
TI-810 Spare Ribbons	ITEM_805		1			AP

NOTES:

- 1) The TI-810 Ribbons are shipped in a Box of six (6).

RULES:

- AP 1) When PEC NTZZ29WA is ordered, these items are provided.

TOPS MPX TYPE 1 TA/DA POSITION W/O MODEM

NTZZ29XA

RATING: MD

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: TOPS MPX Type 1 TA/DA Position w/o Modem

REFERENCE DOCUMENTATION: SLZZ29XA 00 02
NTZZ29XA REL 02

The TOPS MPX Type 1 TA/DA Position w/o Modem is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
TOPS MPX Position (Type 1)	NTNX51DB		1			AP
MPX Audio Card	NTNX51BC		1			AP
Keyboard Template	P0714192		1			AP

RULES:

AP 1) When PEC NTZZ29XA is ordered, these items are provided.

4 OPERATOR TPC SHELF (SCSI)

PEC CODE: NTZZ29VA

CPC CODE: B0234047

| RATING: MD

REPLACES: Not Applicable

| REPLACED BY: TOPS IWS (Intelligent Workstation)

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: 4 Operator TPC Shelf (SCSI)

REFERENCE DOCUMENTATION: SLZZ29VA 00 02
NTZZ29VA REL 01

MARKETS: Applicable markets:

Canada
US
CALA
Asia/Pacific
Europe

| ISSUE AUTHOR: NTI: Dawn Yost Dept. 3471 (PPK)

| MAIN CONTACT: NTI: Dawn Yost Dept. 3471 (PPK)

NTZZ29VA EMC8-02-TPC CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 95 05 11	----- ECM 606 14	Previous history not available Replace NT2X70AE with the NT2X70AF
97 03 04	ECM 606 20	TOPS MP product MDed by EC 018-49251. NTZZ29VA cancelled by EC 018-49251. Several PECs were MDed by this EC. See Equipment flagged table for more details.

The 4 Operator TPC Shelf (SCSI) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
# TPC Pack Fill	NTNX61AF		1	XX		AP
# Aluminum Shield CP	NTNX54BA		1	XX	4	AP-01
# Single Board Computer CP	NTNX64AB		1	XX	6	AP-01
# 4 Megabyte Memory CP	NTNX63AB		1	XX	7	AP-01
# Parallel Input/Output CP	NTNX65BA		1	XX	14	AP-01
Filler Face Plate	NT0X50AA		4	XX	05, 15, 16, 20	AP-01
# Floppy Disk and Control CP	NTNX68CA		1	XX	17-19	AP-01
# Hard Drive and Control CP	NTNX68DA		1	XX	21-23	AP-01
# TOPS EMI Shield/Load CP	NTNX67BA		1	XX	24	AP-01
Power Converter CP	NT2X70AF		2	XX	1, 25	AP
Desig. Label (NT2X70AF)	P0809960		2	XX	1, 25	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTNX61AF	MD	No replacement.
NTNX54BA	MD	No replacement.
NTNX64AB	MD	No replacement.
NTNX63AB	MD	No replacement.
NTNX65BA	MD	No replacement.
NTNX68CA	MD	No replacement.
NTNX68DA	MD	No replacement.
NTNX67BA	MD	No replacement.

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

1) XX = 05, 19, 33 or 47

- 2) AP-01, This PEC is part of the NTNX61AF stocklist and is included herein for completeness.

RULES:

486 UPGRADE KIT FOR NTNX51CB/CC/CD/DB/DC/DD

PEC CODE: NTZZ99AP

CPC CODE: B0238764

| RATING: MD

REPLACES: Not applicable.

| REPLACED BY: NTZZ99AT

ABBREVIATION NAME:

ENGINEERING DESCRIPTION: This kit upgrades NTNX51CB/CC/CD/DB/DC/DD positions to 486 processor, 8 MB RAM, and 106 MB disk. The upgraded positions are NOT given a new PEC. Instead, a label will be applied to the positions, indicating the upgrades which have been applied.

| REFERENCE DOCUMENTATION: MSNX51BA 00 19

MARKETS: Applicable markets:

Canada
US

ISSUE AUTHOR: NTI: David Keilson Dept. 3471 (PPK)

MAIN CONTACT: NTI: David Keilson Dept. 3471 (PPK)

NTZZ99AP EMC8-02-UPG CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 06 26	API 494 01	Introduce TOPS MPX IWS, which requires upgraded positions.
93 07 23	ECM 684 01	Introduce 486 Upgrade for NT DA AOSS. Change rating to standard.
94 09 20	ECM 686 04	MD this building block, due to MD of NTNX51KE disk.

The 486 Upgrade Kit for NTNX51CB/CC/CD/DB/DC/DD is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
4 Meg Memory Kit for 486	NTNX51KA					AP
106 Meg Hard Drive Kit	NTNX51KE					AP
486 Planar Board Kit w/4 Meg	NTNX51KF					AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

AP 1) When PEC NTZZ99AP is ordered, these items are provided.

486 UPGRADE KIT FOR NTNX51CB/CC/CD/DB/DC/DD

PEC CODE: NTZZ99AT

CPC CODE: B0224712

| RATING: MD

REPLACES: NTZZ99AP

| REPLACED BY: NTZZ99BT

ABBREVIATION NAME:

ENGINEERING DESCRIPTION: This kit upgrades NTNX51CB/CC/CD/DB/DC/DD positions to 486 processor, 8 MB RAM, and 212 MB disk. The upgraded positions are NOT given a new PEC. Instead, a label will be applied to the positions, indicating the upgrades which have been applied.

REFERENCE DOCUMENTATION:

MARKETS: Applicable markets:

Canada
US

| ISSUE AUTHOR: NT: Richard Mathias Dept. 3471 (PPK)

| MAIN CONTACT: NT: Richard Mathias Dept. 3471 (PPK)

NTZZ99AT EMC8-02-UPG-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 09 20	ECM 686 04	Introduce new upgrade kit containing 212 MB disk.
95 10 04	ECM 695 06	MD NTZZ99AT upgrade kit per EC 011-21398.

The 486 Upgrade Kit for NTNX51CB/CC/CD/DB/DC/DD is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
4 Meg Memory Kit for 486	NTNX51KA		1			AP
212 Meg Hard Drive (for 486)	NTNX51KJ		1			AP
486 Planar Board Kit w/4 Meg	NTNX51KF		1			AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

AP 1) When PEC NTZZ99AT is ordered, these items are provided.

486 UPGRADE KIT FOR NTNX51CB/CC/CD/DB/DC/DD

PEC CODE: NTZZ99BT

CPC CODE: B0243922

| RATING: MD

REPLACES: NTZZ99AT

| REPLACED BY: NTZZ99CT

ABBREVIATION NAME:

ENGINEERING DESCRIPTION: This kit upgrades NTNX51CB/CC/CD/DB/DC/DD positions to 486 processor, 8 MB RAM, and 540 MB disk. The upgraded positions are NOT given a new PEC. Instead, a label will be applied to the positions, indicating the upgrades which have been applied.

REFERENCE DOCUMENTATION:

MARKETS: Applicable markets:

Canada
US

ISSUE AUTHOR: NT: Bob Belvin Dept. 3471 (PPK)

MAIN CONTACT: NT: Richard Mathias Dept. 3471 (PPK)

NTZZ99BT EMC8-02-UPG-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
95 10 04	ECM 695 06	Introduce new upgrade kit containing 540 MB disk per EC 011-21398.
96 03 04	ECM 695 08	Retire section per ECD 011-21758. HP no longer able to supply.

The 486 Upgrade Kit for NTNX51CB/CC/CD/DB/DC/DD is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
4 Meg Memory Kit for 486	NTNX51KA		1			AP
540 Meg Hard Drive (for 486)	NTNX51KM		1			AP
486 Planar Board Kit w/4 Meg	NTNX51KF		1			AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

AP 1) When PEC NTZZ99BT is ordered, these items are provided.

486 UPGRADE KIT FOR NTNX51CB/CC/CD/DB/DC/DD

PEC CODE: NTZZ99CT

CPC CODE: B0245775

| RATING: MD

REPLACES: NTZZ99BT

REPLACED BY: None

ABBREVIATION NAME:

ENGINEERING DESCRIPTION: This kit upgrades NTNX51CB/CC/CD/DB/DC/DD positions to 486 processor, 8 MB RAM, and 1 GB disk. The upgraded positions are NOT given a new PEC. Instead, a label will be applied to the positions, indicating the upgrades which have been applied.

REFERENCE DOCUMENTATION:

MARKETS: Applicable markets:

Canada
US

| ISSUE AUTHOR: NT: Dawn Yost Dept. 3471 (PPK)

| MAIN CONTACT: NT: Dawn Yost Dept. 3471 (PPK)

NTZZ99CT EMC8-02-UPG-3 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
96 03 04	ECM 695 08	Introduce new upgrade kit containing 1 GB disk per EC 011-21758.
97 03 27	ECM 695 15	MD per EC 024-97713.

The 486 Upgrade Kit for NTNX51CB/CC/CD/DB/DC/DD is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
4 Meg Memory Kit for 486	NTNX51KA		1			AP
#1 GB Hard Drive (for 486)	NTNX51KN		1			AP
#486 Planar Board Kit w/4 Meg	NTNX51KP		1			AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTNX51KN	MD	None
NTNX51KP	MD	None

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

AP 1) When PEC NTZZ99CT is ordered, these items are provided.

TOPS MULTI-PURPOSE EXTENDED SYSTEM

PEC CODE: TOPS_MPX

| CPC CODE: N/A

| RATING: MD

| REPLACES: N/A

| REPLACED BY: IBM_DA_AOSS

| ABBREVIATION NAME: N/A

| ENGINEERING DESCRIPTION: TOPS MPX (IBM DA AOSS) System Description.

REFERENCE DOCUMENTATION: MSNX51BA 00 10

MARKETS: Applicable markets:

Canada
US

| ISSUE AUTHOR: NTI: David Keilson Dept. 3471 (PPK)

| MAIN CONTACT: NTI: David Keilson Dept. 3471 (PPK)

TOPS MPX EMC8-02-000 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
93 02 22	ECM 606 08	ET 14229 & EC 024-85849 - Corrects the provisioning of MPX keyboards. MDs French positions and French keyboards. Introduces position to junction box cables. EC 011-16891 - MD current power strips and introduce new power strips. Miscellaneous corrections. ET 16069 - Corrects provisioning rule for headset jack assemblies.
94 02 22	ECM 606 11	MD the NTZZ29XB/YB/SB BBs, some of the components in them, and the UDS DSU. Refer to the replacement EMS for rules on the replacement items, which are listed in the flaglist. Change rating on this EMS to MD. Change to latest EMS format.

The TOPS Multi-Purpose Extended System is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
# Type 1 TOPS MPX Position	NTZZ29QA					RUL1
# Type 2 TOPS MPX Position	NTZZ29RA					RUL1
# Type 3 TOPS MPX Position	NTZZ29SA					RUL1
# Type 1 TOPS MPX Pos w/o Mod	NTZZ29XA					RUL1
# Type 2 TOPS MPX Pos w/o Mod	NTZZ29YA					RUL1
# Type 1 TOPS MPX Pos w/o Mod	NTZZ29XB					RUL1
# French TOPS MPX Type 1 Pos	NTZZ36BA					RUL1
# Type 2 TOPS MPX Pos w/o Mod	NTZZ29YB					RUL1
# French TOPS MPX Type 2 Pos	NTZZ36CA					RUL1
# Type 3 TOPS MPX Pos	NTZZ29SB					RUL1
# French TOPS MPX Type 3 Pos	NTZZ36DA					RUL1
# UDS 56K Data Set Unit	64565005					RUL6
GDC 56K Data Set Unit	NTNX5154					RUL6
# Headset Jk Assem 6.5 Foot	NTZZ29ZA					RUL7
Headset Jk Assem 10 Foot	NTZZ36AA					RUL7
Headset Jack Assembly	NTZZ36EA					RUL7
TOPS MPX Custom Keycap Kit (SBT&T)	2CT55438					RUL2
Keyboard Label	P0715192					RUL2
# Twist-Lock Power Strip	IBAR4-12HP					RUL3
Twist-Lock Power Strip	A0384297					RUL3
# Straight Blade Power Strip	ISOBAR4-12HP					RUL3
Straight Blade Power Strip	A0384296					RUL3
Position Numbering Labels						RUL4
- (Pos. #0000 - #0071)	P0709162					
- (Pos. #0072 - #0143)	P0709163					
- (Pos. #0144 - #0215)	P0709164					
- (Pos. #0216 - #0287)	P0709165					
- (Pos. #0288 - #0359)	P0709166					
- (Pos. #0360 - #0431)	P0709167					
- (Pos. #0432 - #0503)	P0709168					
- (Pos. #0504 - #0575)	P0709169					
- (Pos. #0576 - #0647)	P0709170					
- (Pos. #0648 - #0719)	P0709171					
- (Pos. #0720 - #0791)	P0709172					
- (Pos. #0792 - #0863)	P0709173					
- (Pos. #0864 - #0935)	P0709174					
- (Pos. #0936 - #1007)	P0709175					
- (Pos. #1008 - #1023)	P0709176					
TOPS MPX MAU Numbering Labels						RUL5
- (MAU #0000 - #0050)	P0709177					
- (MAU #0051 - #0101)	P0709178					
# PS2 Base (Type 1 & 2)	A0378954					RUL8
# PS2 Base (Type 3)	A0378953					RUL8

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
# Color Monitor	A0368912					RUL8
TOPS MPX Keyboard	A0379250					RUL8
# TOPS MPX Keyboard English	A0382150					RUL8
# TOPS MPX Keyboard French	A0379072					RUL8
FC 6401 RTIC Card	A0369273					RUL9
# FC 1133 Token Ring Card	A0368911					RUL10
MPX Audio Card	NTNX51BD					RUL11
T.R. Data Cbl, Posn-Junc Box	A0385644					RUL12
Voice Cbl, Posn-Junc Box	NT0R82AB					RUL12

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTZZ29QA	MD	NTZZ29XA
NTZZ29RA	MD	NTZZ29YA
NTZZ29SA	MD	NTZZ29SB
NTZZ29XA	MD	NTZZ29XB
NTZZ29YA	MD	NTZZ29YB
NTZZ29XB	MD	NTZZ36GA
NTZZ36BA	MD	No replacement.
NTZZ29YB	MD	NTZZ36GA
NTZZ36CA	MD	No replacement.
NTZZ29SB	MD	NTZZ36GA
NTZZ36DA	MD	No replacement.
64565005	MD	A0602029/NTNX5154
NTZZ29ZA	MD	NTZZ36AA/NTZZ36EA
IBAR4-12HP	MD	A0384297
ISOBAR4-12HP	MD	A0384296
A0378954	MD	NTNX51FB
A0378953	MD	NTNX51FB
A0368912	MD	NTNX51LD
A0382150	MD	No replacement.
A0379072	MD	No replacement.
A0368911	MD	A0602526

DEV - DEVELOPMENT. These products are in the development phase.
Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if
they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

- RUL1 1) Provide Type 1, Type 2, or Type 3 TOPS MPX Positions as per job requirements and for sparing of Type 1, Type 2 or Type 3 positions.
- RUL2 1) For customers who wish to customize the TOPS MPX keyboards (Southern Bell), provide one (1) 2CT55438 TOPS MPX Custom Keycap Kit per position and one (1) P0715192 Keyboard Label per position.
- RUL3 1) Provide one (1) A0384297 Twist-Lock Power Strip per position. This is the standard type. The plug on this power strip is of the twist-lock type and thus requires a matching twist-lock outlet. A0384297 replaces IBAR4-12HP, and has both UL and CSA approval.
- 2) Provide one (1) A0384296 Straight Blade Power Strip per position where twist-lock power outlets are not available. A0384296 replaces ISOBAR4-12HP, and has both UL and CSA approval.
- RUL4 1) Provide two (2) sets of labels, choosing the range of position numbers to suit job requirements. The second set allows the customer to label spares when replacing failed equipment.
- RUL5 1) Provide one (1) P0709177 TOPS MPX MAU Numbering Label sheet for each TOPS MPX system installation using up to 4 MIS frames. Also provide one (1) P0709178 TOPS MPX MAU Numbering Label sheet for each system using 5 or more MIS frames.
- RUL6 1) Provide one 56K Data Set Unit for each Type 1 or Type 2 position ordered. Either of the UDS or GDC DSU may be selected per Customer preference.
- RUL7 1) Provide one (1) NTZZ36EA, NTZZ29ZA, or NTZZ36AA per position. Each of these building blocks includes two (2) headset jack assemblies. The NTZZ36EA Headset Jack Assem-

bly shall be provided for connections to positions which have the NTNX51BD audio card. The NTZZ36EA includes the NTNX5309 Headset Jack Assembly, which includes a ten foot cable assembly. The NTZZ29ZA and NTZZ36AA Headset Jack Assemblies can be provided for positions with the NTNX51BD audio card, but the preferred connection is the NTZZ36EA. NTZZ36EA (which includes the NTNX5309) does not provide the noise reducing toroid required for TOPS MP positions and for TOPS MPX positions which use the NTNX51BC audio card. The customer is to provide headsets that meet the generic headset requirements per TA-EOP-000314 published by Bellcore in August, 1986.

- RUL8 1) Sparing of TOPS MPX position parts shall be done by providing complete positions of each type. The parts listed per this rule may be ordered individually as spare parts if required.
- RUL9 1) The RTIC card is supplied with the base unit and does NOT need to be ordered by Customer Engineering for each position. This unit may be ordered for sparing individually if required.
- RUL10 1) The Token Ring card is supplied with the base unit and does NOT need to be ordered by Customer Engineering for each position. This unit may be ordered for sparing individually if required.
- RUL11 1) The MPX Audio Card is included in the position building block codes and does NOT need to be ordered by Customer Engineering for each position. This unit may be ordered for sparing individually if required.
- RUL12 1) Provide one position to junction box data cable and one position to junction box voice cable for each Type 1, Type 2, or Type 3 position required. Also provide these cables for positions provided as spares.

| TOPS MPX MIS FRAME (CANADA ONLY)

PEC CODE: NTZZ15GA

CPC CODE: B0235024

RATING: MD

REPLACES: N/A

REPLACED BY: NT0X02AB

ABBREVIATION NAME: MIS

ENGINEERING DESCRIPTION: The TOPS MPX MIS Building Block PEC provides a MIS Frame with a Universal Framework but not equipped with an FSP. This MIS Frame Building Block PEC is intended for use on Canadian TOPS MPX jobs only.

REFERENCE DOCUMENTATION: SLZZ15GA 00 02

MARKETS: Applicable markets:

Canada

ISSUE AUTHOR: NTI: David Keilson Dept. 3471 (PPK)

MAIN CONTACT: NTI: David Keilson Dept. 3471 (PPK)

NTZZ15GA EMC8-02-001 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 92 12 07	----- ECM 606 06	Previous history not available The framework NT0X25AV is rated A&M and it is replaced by framework NT0X25AH. (ECD 018-39307)
94 03 21	ECM 606 12	NT0X9548 grounding assembly is not needed, leaving only the frame and framework in the building block. MD this building block and provision in detail.
94 09 16	ECM 606 13	Retire this EMS (already MD).

The TOPS MPX MIS Frame (Canada Only) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
MIS Equipment Frame	NT0X02AB		1			AP
# Universal Framework	NT0X25AV		1			AP
Universal Framework	NT0X25AH		1			AP
Grounding Material Assembly	NT0X9548		1			AP
TOPS MPX Mounting Hardware	NTNX5109					RUL1
MAU	A0368910					RUL2
Belkin MAU Test Tool	A0379352					RUL2
MAU Adapter Bracket	P0709734					RUL2
TOPS MPX BIX Box Assy	NTNX5103					RUL2
BIX Box Adapter Bracket	P0702320					RUL3

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NT0X25AV	MD	NT0X25AH

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

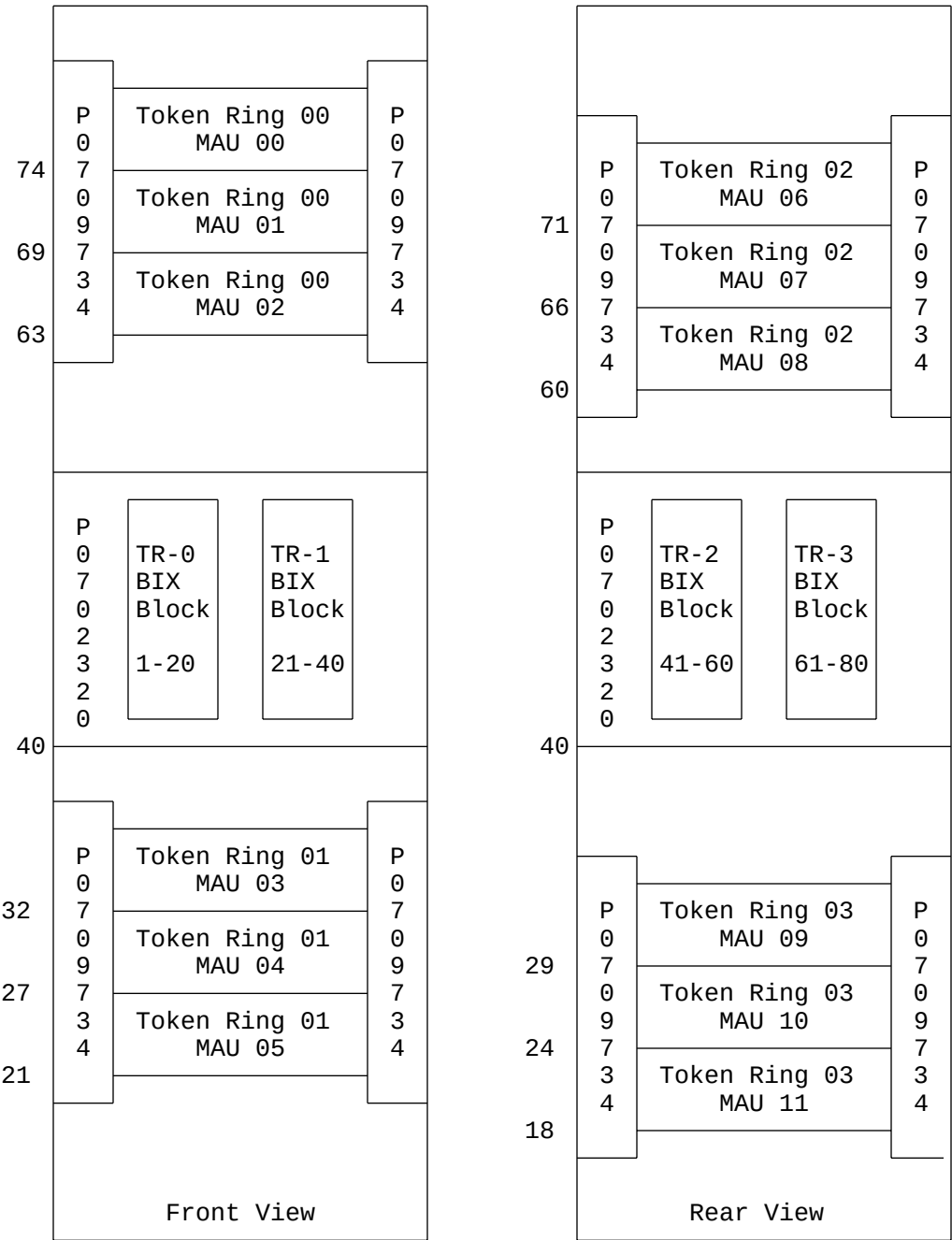
NOTES:

- 1) Refer to Figure 1 for shelf positions for the MAU and BIX Box.

RULES:

- AP 1) When PEC NTZZ15GA is ordered, these items are provided.

- RUL1 1) Provide one (1) NTNX5109 TOPS MPX mounting hardware per Miscellaneous Frame used in TOPS MPX applications. (This kit contains hardware for a fully equipped TOPS MPX Miscellaneous Frame). A TOPS MPX Miscellaneous frame cannot house other miscellaneous equipment than that dedicated for TOPS MPX. A TOPS MPX Miscellaneous Frame does not require an FSP. (Reference Figure 1)
- RUL2 1) For the TOPS MPX system, one token ring contains from 1 to 20 operator positions (16 standard). Each frame may contain a maximum of four (4) token rings. Refer to NTNX51BA for further TOPS MPX provisioning.
- 2) Provide three (3) MAUs per token ring required.
- 3) Provide two (2) P0709734 MAU adapter brackets per token ring. (Two brackets will accomodate the mounting of three (3) MAUs).
- 4) Provide one (1) NTNX5103 TOPS MPX BIX Block assembly per token ring.
- 5) Provide one (1) A0379352 Belkin MAU Test Tool per MIS frame in which MAU are mounted.
- RUL3 1) Provide one (1) P0702320 BIX Block adapter bracket per each two (2) TOPS MPX BIX Block assembly (NTNX5103). (One bracket accomdates two (2) BIX Block assemblies).



TOPS MPX Miscellaneous Frame Layout
Figure 1

TOPS MPX IBM DA AOSS POSITION EQUIPMENT

PEC CODE: IBM_DA_AOSS

CPC CODE: Not applicable.

| RATING: MD

REPLACES: TOPS_MPX & NTNX51BA

REPLACED BY: Not applicable.

ABBREVIATION NAME: Not applicable.

ENGINEERING DESCRIPTION: This EMS provisions hardware for the TOPS MPX IBM DA AOSS application. This EMS provisions only the position hardware and MAU numbering labels.

REFERENCE DOCUMENTATION: MSNX51BA 00 27

MARKETS: Applicable markets:

Canada
US

| ISSUE AUTHOR: NT: Dawn Yost Dept. 3471 (PPK)

| MAIN CONTACT: NT: Dawn Yost Dept. 3471 (PPK)

IBM DA AOSS EMC8-02-002 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
----- 93 07 20 94 02 22	----- ECM 606 10 ECM 606 11	Previous history not available Introduce NTN51FB for IBM DA AOSS. MD UDS D56 modem. Introduce 9524 monitor and MD 9518 monitor. Introduce NTZZ36GB position and MD NTZZ36GA position.
94 09 16	ECM 606 13	Introduce NTZZ36GC position per EC 011-19973. Introduce UDS A0609602 DSU. MD NTZZ36GB position and NTN5154 DSU per EC 011-20390
96 08 15	ECM 606 18	Incorporate EC 011-21910 which MD's monitor NTN51LJ and replaces it with NTN51LL.
97 03 27	ECM 606 21	Incorporated EC 024-97713 which MD's TOPS MPX product. Cleaned up stocklist.

The TOPS MPX IBM DA AOSS Position Equipment is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
# TOPS MPX Posn w/ NTNX51FB	NTZZ36GA					RUL1
# TOPS MPX Posn w/ NTNX51FB	NTZZ36GB					RUL1
# TOPS MPX Posn w/ NTNX51PB	NTZZ36GC					RUL1
FC 6401 RTIC Card	A0369273				03	RUL2
69X8138 Token-ring Card	A0602526				04	RUL3
MPX Audio Card	NTNX51BD				05	RUL4
Keyboard, Engl IBM DA AOSS	NTNX51HA					RUL5
# Color Monitor 9518	NTNX51LC					RUL6
# Color Monitor 9524	NTNX51LD					RUL6
# Data Set Unit (UDS D56)	64565005					RUL7
# Data Set Unit (GDC 56K)	NTNX5154					RUL7
UDS 56K DSU	A0609602					RUL7
GDC DT500N 56K DSU	A0602029					RUL7
Twist-lock Power Strip	A0384297					RUL8
Straight Blade Power Strip	A0384296					RUL8
TOPS MPX Headset Jack Assy	NTZZ36EA					RUL9
Position Numbering Labels						RUL10
- (Pos. #0000 - #0071)	P0709162					
- (Pos. #0072 - #0143)	P0709163					
- (Pos. #0144 - #0215)	P0709164					
- (Pos. #0216 - #0287)	P0709165					
- (Pos. #0288 - #0359)	P0709166					
- (Pos. #0360 - #0431)	P0709167					
- (Pos. #0432 - #0503)	P0709168					
- (Pos. #0504 - #0575)	P0709169					
- (Pos. #0576 - #0647)	P0709170					
- (Pos. #0648 - #0719)	P0709171					
- (Pos. #0720 - #0791)	P0709172					
- (Pos. #0792 - #0863)	P0709173					
- (Pos. #0864 - #0935)	P0709174					
- (Pos. #0936 - #1007)	P0709175					
- (Pos. #1008 - #1023)	P0709176					
TOPS MPX MAU Numbering Labels						RUL11
- (MAU #0000 - #0050)	P0709177					
- (MAU #0051 - #0101)	P0709178					
MPX Key Cap Kit 2CT55438	A0352180					RUL12
Keyboard Label	P0715192					RUL12
Keycap Removal Tool	A0379341					RUL13
Relegendable Key Cap Assy	P0802113					RUL14
Designation Label Instr.	P0844816					RUL14

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTNX51LD	MD	None.
NTNX51LC	MD	NTNX51LD
64565005	MD	A0609602
NTNX5154	MD	A0602029
NTZZ36GA	MD	NTZZ36GB
NTZZ36GB	MD	NTZZ36GC

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) Each cluster of four positions requires two DMS gateway positions. Each token-ring requires two database gateway positions. Non-gateway positions are called operator positions.
- 2) NTNX51CB/CC/CD are referred to as "C series" positions. NTNX51DB/DC/DD are referred to as "D series" positions.

RULES:

- RUL1 1) Provision positions according to traffic requirements. Also provision for sparing if required. All TOPS MPX positions are compatible with IBM DA AOSS.
- RUL2 1) For NTZZ36GA/GB/GC positions, provision one (1) RTIC card for each DMS gateway and database gateway position. Also provision for sparing if required. The RTIC card was included in "C" and "D" series gateway (formerly called "type 1" and "type 2") positions.

- RUL3 1) The Token-ring card is supplied with the position building block and does NOT need to be ordered by Customer Engineering for each position. This unit may be ordered for sparing if required.
- RUL4 1) The Digital Telephony Audio card is included in the position building block, and does not need to be ordered for each position. Provision for sparing if required.
- RUL5 1) Provision one (1) keyboard for each NTZZ36GA/GB/GC position. Also provision for sparing if required. Except for a label, this keyboard is the same as the A0379250 keyboard included with "C" and "D" series positions.
- RUL6 1) The color monitor is included in the NTZZ36GA/GB/GC building block and does NOT need to be ordered by Customer Engineering for each position. This unit may be ordered for sparing if required. The NTNX51LC monitor is NOT compatible with "C" and "D" series positions. The NTNX51LD monitor IS compatible with all MPX positions.
- RUL7 1) Provide one 56K Data Set Unit for each DMS gateway position and database gateway position supplied. Select the DSUs per Customer preference. Also provision for sparing if required.
- RUL8 1) Provide one power strip per position. Provide power strips with twist-lock plugs or straight-blade plugs according to the type of outlets available.
- RUL9 1) Provide one TOPS MPX headset jack assembly building block per position. This building block provides two headset jack assemblies. The customer is to provide headsets.
- RUL10 1) Provide two sets of position numbering labels per job requirements. The second set will allow the customer to label spares when replacing failed equipment.
- RUL11 1) Provide one P0709177 TOPS MPX MAU Numbering Label Sheet for each TOPS MPX system installation requiring up to four MIS frames. Provide one P0709178 TOPS MPX MAU Numbering Label Sheet for each system requiring five or more MIS frames. Each MIS frame supports up to four token-rings.
- RUL12 1) The A0352180 (2CT55438) Keycap kit is available for Southern Bell keyboard customization. Provide one (1) kit and one keyboard label (P0715192) per position for Southern Bell.

- RUL13 1) Provide one keycap removal tool per OSC (Operator Service Center).
- RUL14 1) Provide re-legendable key cap(s) if required by the customer. These adhesive labels fit under the clear (re-legendable) keys and are provisioned one per existing A0379250 keyboard per customer request. Provision for spare as the P0844816 is included in the NTNX51HA/HB per customer request.

TOPS MPX NT DA AOSS POSITION EQUIPMENT

PEC CODE: NT_DA_AOSS

CPC CODE: n/a

| RATING: MD

REPLACES: n/a

REPLACED BY: MPX_IWS

ABBREVIATION NAME: n/a

ENGINEERING DESCRIPTION: TOPS MPX NT DA AOSS allows the NAS Directory Assistance database to be accessed from MPX terminals. This EMS provisions the hardware needed for the positions.

REFERENCE DOCUMENTATION: MSNX51BA 00 19

MARKETS: Applicable markets:

Canada
US
CALA

| ISSUE AUTHOR: NTI: Dawn Yost Dept. 3471 (PPK)

| MAIN CONTACT: NTI: Dawn Yost Dept. 3471 (PPK)

NT DA AOSS EMC8-02-003 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 03 25	API 317 01	Introduce NT DA AOSS.
93 05 10	API 317 02	Provision using NTZZ36FA position building block.
93 06 26	API 317 03	Introduce NTZZ36GA position building block with NTNX51FB position. Use new EMS template.
93 07 23	ECM 684 01	Initial release with ECM. Change title and ratings.
94 02 28	ECM 684 02	EC 011-19376: Offer standard 20 position token ring (no dedicated routers) in addition to current 20+2 configuration. Replace 9518 monitor with 9524, per EC 011-19778. Indicate MD of UDS 56K DSU. Introduce NTNX51HE keycap kit to NT DA AOSS. MD NTZZ36FA, A0368911, NTNX51LA. Replace NTZZ36GA with NTZZ36GB.
94 09 21	ECM 684 03	EC 011-19973: Introduce NTZZ99AT upgrade kit. Modify rules for new position NTZZ36GC and new UDS DSU A0609602. EC 011-20390: MD NTZZ99AP upgrade kit, modify rules for MD of NTZZ36GB position and NTNX5154 DSU. EC 011-19974: Introduce re-legendable keycaps. Correct markets to remove Europe.
94 10 24	ECM 684 04	Change status of NT DA AOSS to A&M. Add audio card diagnostic diskette and blank keycaps. Miscellaneous revisions.
95 10 12	ECM 684 05	EC 011-21398: MD NTZZ99AT upgrade kit

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
97 03 27	ECM 684 07	EC 024-97713: MD NT_DA_AOSS. Cleaned up stocklist.

The TOPS MPX NT DA AOSS POSITION EQUIPMENT is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
# TOPS MPX Posn BB w/ NTN51GB	NTZZ36FA					RUL1
# TOPS MPX Posn w/ NTN51FB	NTZZ36GA					RUL1
# TOPS MPX Posn w/ NTN51FB	NTZZ36GB					RUL1
# MPX Pos NTN51PB W/ NTN51BD	NTZZ36GC					RUL1
# MPX Pos NTN51PB W/ NTN51BE	NTZZ36GD					RUL1
# FC 6401 RTIC Card	A0369273					RUL2
# FC 1133 Token Ring Card	A0368911					RUL3
# 69X8138 Token Ring Card	A0602526					RUL3
# MPX Audio Card	NTN51BD					RUL4
MPX Audio Card	NTN51BE					RUL4
Audio Card Diag S/W 1.0	P0724371					RUL4
TOPS MPX Keybd, Combined Eng	NTN51HB					RUL5
TOPS MPX Keybd, Combined Fre	NTN51HD					RUL5
TOPS MPX Keytop Des Labels	P0741755					RUL6
# Color Monitor 8512	NTN51LA					RUL7
# Color Monitor 9518	NTN51LC					RUL7
# Color Monitor 9524	NTN51LD					RUL7
# Data Set Unit (UDS D56)	64565005					RUL8
Data Set Unit (UDS 56K)	A0609602					RUL8
# Data Set Unit (GDC 56K)	NTN5154					RUL8
Data Set Unit (GDC DT500N)	A0602029					RUL8
Maint Modem (GDC DC596)	A0351816					RUL9
Cable, 25P Male - 25P Female	A0600741					RUL9
Cable, 25P Male - 9P Female	A0601464					RUL9
Twist-lock Power Strip	A0384297					RUL10
Straight Blade Power Strip	A0384296					RUL10
TOPS MPX Headset Jack Assy	NTZZ36EA					RUL11
Position Numbering Labels						RUL12
- (Pos. #0000 - #0071)	P0709162					
- (Pos. #0072 - #0143)	P0709163					
- (Pos. #0144 - #0215)	P0709164					
- (Pos. #0216 - #0287)	P0709165					
- (Pos. #0288 - #0359)	P0709166					
- (Pos. #0360 - #0431)	P0709167					
- (Pos. #0432 - #0503)	P0709168					
- (Pos. #0504 - #0575)	P0709169					
- (Pos. #0576 - #0647)	P0709170					
- (Pos. #0648 - #0719)	P0709171					
- (Pos. #0720 - #0791)	P0709172					
- (Pos. #0792 - #0863)	P0709173					
- (Pos. #0864 - #0935)	P0709174					
- (Pos. #0936 - #1007)	P0709175					
- (Pos. #1008 - #1023)	P0709176					

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
TOPS MPX MAU Numbering Labels						RUL13
- (MAU #0000 - #0050)	P0709177					
- (MAU #0051 - #0101)	P0709178					
Keycap Removal Tool	A0379341					RUL14
# 486 Upgrade for C/D Series	NTZZ99AP					RUL15
# 486 Upgrade for C/D Series	NTZZ99AT					RUL15
# 486 Upgrade for C/D Series	NTZZ99BT					RUL15
Upgrade Parent Label	P0742570					RUL15
Keycap Upgrade Kit	NTNX51HC					RUL16
Keycap Upgrade Kit	NTNX51HE					RUL17
Relegendable Key Cap Assy	P0802113					RUL18
Key Cap (Single Width Blank)	P0714148					RUL19

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTZZ36GD	MD	None
NTNX51LD	MD	None
NTZZ36FA	MD	NTZZ36GA
NTZZ36GA	MD	NTZZ36GB
NTZZ36GB	MD	NTZZ36GC
A0368911	MD	A0602526
NTNX51LA	MD	NTNX51LC
NTNX51LC	MD	NTNX51LD
64565005	MD	A0609602
NTNX5154	MD	A0602029
NTZZ99AP	MD	NTZZ99AT
NTZZ99AT	MD	NTZZ99BT
NTZZ36GC	MD	NTZZ36GD
NTNX51BD	MD	NTNX51BE

DEV - DEVELOPMENT. These products are in the development phase.
Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if
they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufac-
tured and cannot be ordered.

NOTES:

- 1) For 20+2 Configuration: Each token ring requires two router positions. These positions do NOT provide operator functionality, and are not part of any cluster. Each fully-equipped cluster (of four positions) requires two DMS gateway positions (one for non-redundant configurations) and two operator positions (three for non-redundant configurations).
- 2) For Standard Configuration: Each token ring requires two database gateway positions. These positions DO provide operator functionality. If there is more than one cluster on the token ring, it is recommended that the database gateway positions be in different clusters. Each cluster requires two DMS gateway positions (one for non-redundant configurations). The remaining positions in each cluster are operator positions.
- 3) In a redundant configuration, a single DMS gateway position is permitted if it is the only position in the cluster.
- 4) Non-redundant configurations are NOT recommended.
- 5) Optionally, one operator position on each token ring may be equipped with a modem for dial-in maintenance. This position is referred to as a combined operator/maintenance position.
- 6) The CALA market is only supported for countries which use 110 volt power.
- 7) NT DA AOSS positions require a minimum of 486 processor, 8 MB RAM, and 106 MB disk. Upgrade kits for NTN51CB/CC/CD/DB/DC/DD positions are no longer provided (all have been MD). See rules 15-17 for upgrades.

RULES:

- RUL1 1) Provision positions per traffic requirements. Also provision for sparing if required.
- RUL2 1) Provision one (1) RTIC card for each DMS gateway, database gateway, and router position. Also provision for sparing if required. This card mounts in slot 1 of NTN51GB positions and slot 3 of NTN51FB/PB positions.

- RUL3 1) The Token Ring card is supplied with the position/building block, and does NOT need to be ordered by Customer Engineering for each position. This unit may be ordered for sparing if required. This card mounts in slot 2 of NTNX51GB positions, and slot 4 of NTNX51FB/PB positions. The earlier version of the token ring card, A0368911, is compatible with the NT DA AOSS application. The A0602526 token ring card is compatible with all current and previous positions.
- RUL4 1) The Digital Telephony Audio Card is included in the position building block and does NOT need to be ordered by Customer Engineering for each position. This unit may be ordered for sparing if required. The Audio Card mounts in slot 3 of NTNX51GB positions, and slot 5 of NTNX51FB/PB positions.
- 2) Order two (2) audio card diagnostic diskettes per OSC (Operator Service Center).
- RUL5 1) Provision one (1) keyboard (French or English) for each position. Also provision for sparing if required.
- RUL6 1) This set of keytop labels is included with the NTNX51HB keyboard, and is listed here for sparing purposes only. These labels are also included in the NTNX51HC keycap upgrade.
- RUL7 1) The monitor is included in the position building block, and is listed here for sparing purposes only. NTNX51LC is only compatible with NTNX51FB/PB positions. NTNX51LA and NTNX51LD are compatible with all TOPS MPX positions.
- RUL8 1) Provide one 56K Data Set Unit for each DMS gateway, database gateway, or router position supplied. Select the DSU per customer preference.
- RUL9 1) Provide one (1) modem and one (1) cable per combined operator/maintenance position for dial-up maintenance capability. NTNX51GB positions require the 25P/25P cable; (upgraded) NTNX51CB/CC/CD/DB/DC/DD positions require the 25P/25P cable; NTNX51FB/PB positions require the 25P/9P cable.
- RUL10 1) Provide one power strip per position. Provide power strips with twist-lock plugs or straight-blade plugs according to the type of outlets available.

- RUL11 1) Provide one headset jack assembly building block per operator, operator/maintenance, and DMS gateway position. Do NOT provision this for router positions. This building block includes two headset jack assemblies (10 ft. length). The Customer is to provide headsets.
- RUL12 1) Provide two sets of designation labels per job requirements. The second set will allow the customer to label spares when replacing failed equipment.
- RUL13 1) Provide one P0709177 TOPS MPX MAU Numbering Label Sheet for each TOPS MPX system installation requiring up to four MIS frames. Provide one P0709178 TOPS MPX MAU Numbering Label Sheet for each system requiring five or more MIS frames. Each MIS frame supports up to four token rings.
- RUL14 1) Provide one keycap removal tool per OSC (Operator Service Center).
- RUL15 1) Upgrade kits for NTNX51CB/CC/CD/DB/DC/DD positions are no longer provided (all have been MD).
- RUL16 1) Provide one NTNX51HC Keycap Upgrade for each A0379250 or NTNX51HA keyboard being upgraded to support NT DA AOSS. The NTNX51HC upgrades the A0379250 and NTNX51HA keyboards to NTNX51HB (Combined English) functionality.
- RUL17 1) Provide one NTNX51HE Keycap Upgrade when upgrading a Combined English (NTNX51HB) keyboard to support French.
- RUL18 1) Provide re-legendable key cap(s) if required by the customer.
- RUL19 1) Provide ten (10) blank key caps per keyboard for Bell South ONLY.

TOPS MPX IWS POSITION EQUIPMENT

PEC CODE: MPX_IWS

CPC CODE: Not applicable.

| RATING: MD

REPLACES: Not applicable.

REPLACED BY: Not applicable.

ABBREVIATION NAME: Not applicable.

ENGINEERING DESCRIPTION: This EMS provisions hardware for TOPS MPX IWS applications. These applications include Operator Assistance (also called Toll and Assist), Open Information Access, NT DA IWS, and IBM DA IWS. This EMS provisions only the position hardware and MAU numbering labels.

REFERENCE DOCUMENTATION: MSNX51BA 00 19

MARKETS: Applicable markets:

Canada
US
CALA
Europe

ISSUE AUTHOR: NT: Richard Mathias Dept. 3471 (PPK)

MAIN CONTACT: NT: Richard Mathias Dept. 3471 (PPK)

MPX IWS EMC8-02-004 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 10 04	ECM 686 01	Introduce TOPS MPX IWS.
94 02 24	ECM 686 02	Introduce NTNX51KH 106 MB disk upgrade option, per EC 011-19376. Introduce TOPS MPX Number Row Template for use with IBM DA OPP. Replace 9518 monitor with 9524, per EC 011-19778. Replace NTZZ36GA position with NTZZ36GB. MD UDS 56K DSU. Miscellaneous revisions.
94 06 03	ECM 686 03	Introduce NT DA IWS. Added NT DA IWS provisioning to existing IWS application rules.
94 09 20	ECM 686 04	EC 011-19973: Introduce NTZZ99AT upgrade kit. Modify rules for new position NTZZ36GC and new UDS DSU A0609602. EC 011-20390: MD NTZZ99AP upgrade kit, modify rules for MD of NTZZ36GB position and NTNX5154 DSU. EC 011-19974: Introduce re-legendable keycaps. Change description of NTNX51KH to indicate increased disk capacity. Correct markets to include CALA.
95 10 12	ECM 686 05	EC 011-21398: Introduce NTZZ99BT upgrade kit. Changes maintenance

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
95 10 27	ECM 686 06	modem. MD MPX_IWS Release 1.0.

The TOPS MPX IWS Position Equipment is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
# TOPS MPX Position NTN51FB	NTZZ36GA					RUL1
# TOPS MPX Position NTN51FB	NTZZ36GB					RUL1
# MPX Pos NTN51PB w/ NTN51BD	NTZZ36GC					RUL1
MPX Pos NTN51PB w/ NTN51BE	NTZZ36GD					RUL1
FC 6401 RTIC Card	A0369273					RUL2
69X8138 Token Ring Card	A0602526					RUL3
# MPX Audio Card	NTNX51BD					RUL4
MPX Audio Card	NTNX51BE					RUL4
TOPS MPX Keybd, Combined Eng	NTNX51HB					RUL5
TOPS MPX Keybd, Combined Fre	NTNX51HD					RUL5
TOPS MPX Number Row Template	P0740628					RUL5
# Color Monitor 9518	NTNX51LC					RUL6
Color Monitor 9524	NTNX51LD					RUL6
# Data Set Unit (UDS D56)	64565005					RUL7
Data Set Unit (UDS 56K)	A0609602					RUL7
# Data Set Unit (GDC 56K)	NTNX5154					RUL7
Data Set Unit (GDC DT500N)	A0602029					RUL7
* Maint Modem (GDC DC596)	A0351816					RUL8
GDC (V.FAST) (110V)	A0620530					RUL8
Cable, 25P Male - 25P Female	A0600741					RUL8
Cable, 25P Male - 9P Female	A0601464					RUL8
Twist-lock Power Strip	A0384297					RUL9
Straight Blade Power Strip	A0384296					RUL9
TOPS MPX Headset Jack Assy	NTZZ36EA					RUL10
Position Numbering Labels						RUL11
- (Pos. #0000 - #0071)	P0709162					
- (Pos. #0072 - #0143)	P0709163					
- (Pos. #0144 - #0215)	P0709164					
- (Pos. #0216 - #0287)	P0709165					
- (Pos. #0288 - #0359)	P0709166					
- (Pos. #0360 - #0431)	P0709167					
- (Pos. #0432 - #0503)	P0709168					
- (Pos. #0504 - #0575)	P0709169					
- (Pos. #0576 - #0647)	P0709170					
- (Pos. #0648 - #0719)	P0709171					
- (Pos. #0720 - #0791)	P0709172					
- (Pos. #0792 - #0863)	P0709173					
- (Pos. #0864 - #0935)	P0709174					
- (Pos. #0936 - #1007)	P0709175					
- (Pos. #1008 - #1023)	P0709176					
TOPS MPX MAU Numbering Labels						RUL12
- (MAU #0000 - #0050)	P0709177					
- (MAU #0051 - #0101)	P0709178					
Key Cap (Single Width Blank)	P0714148					RUL13

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Keycap Removal Tool	A0379341					RUL14
# 486 Upgr to "C" & "D" Series	NTZZ99AP					RUL15
# 486 Upgr to "C" & "D" Series	NTZZ99AT					RUL15
486 Upgr to "C" & "D" Series	NTZZ99BT					RUL15
4 Meg Memory Kit for 386	NTNX51KG					RUL15
# 80 MB Hard Drive Kit	NTNX51KD					RUL15
106 or 212 MB Hd Dr for 386	NTNX51KH					RUL15
Upgrade Parent Label	P0742570					RUL15
Keycap Upgr Kit (HA to HB)	NTNX51HC					RUL16
Keycap Upgr Kit (HB to HD)	NTNX51HE					RUL17
Relegendable Key Cap Assy	P0802113					RUL18

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTNX51LC	MD	NTNX51LD
64565005	MD	A0609602
NTNX5154	MD	A0602029
NTZZ36GA	MD	NTZZ36GB
NTZZ36GB	MD	NTZZ36GC
NTZZ99AP	MD	NTZZ99AT
NTNX51KD	MD	NTNX51KH
NTZZ99AT	MD	NTZZ99BT
A0351816	PENDING	A0620530
NTZZ36GC	MD	NTZZ36GD
NTNX51BD	MD	NTNX51BE

DEV - DEVELOPMENT. These products are in the development phase.
Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if
they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufac-
tured and cannot be ordered.

NOTES:

- 1) Each cluster (of four or sixteen positions) requires two DMS gateway positions (for redundant configurations). Non-redundant configurations (one DMS gateway position per cluster) are NOT RECOMMENDED.

Except for NT DA IWS with D1 using commercial routers, each token ring which supports Directory Assistance requires two database gateway positions. If commercial routers are used with NT DA IWS, database gateway positions are NOT required. OA and OIA do NOT require database gateway positions.

Non-gateway positions are called operator positions. One operator position on each token ring may be equipped with a modem for dial-in maintenance. This position is referred to as a combined operator/maintenance position, or simply as an operator/maintenance position.

- 2) The monitor included with NTNX51CB/CC/CD/DB/DC/DD positions (A0368912) is compatible with IWS applications. The earlier versions of the Audio Card (NTNX51BC) and Token Ring Card (A0368911) are compatible with IWS applications.
- 3) When upgrading NTNX51CB/CC/CD/DB/DC/DD positions (or the building blocks which include them), remember that these positions/building blocks include the following items which are NOT included in the NTZZ36GA/GB/GC:

RTIC Card (NTNX51CB/CC/DB/DC only)
Keyboard

- 4) Only 106 MB and greater disks are supported with the 486 processor. Also, the 386 and 486 processors require different memory modules. Therefore, any systems upgraded to 386/8/40 which are later upgraded to 486, will require new memory and disk at the time the processor is upgraded to 486.
- 5) NTNX51CB/CC/CD positions are referred to as "C" series positions. "C" series positions are 386/2 MB RAM/30 MB disk. These positions require an upgrade to support IWS applications.

NTNX51DB/DC/DD positions are referred to as "D" series positions. "D" series positions are 386/4 MB RAM/40 MB disk. These positions require an upgrade to support IWS applications.

NTNX51FB and NTNX51GB positions are 486/8 MB RAM/106 MB disk. These positions do NOT require an upgrade to support IWS applications. (However, the keyboards with these positions may require a keycap upgrade kit, depending upon the application previously supported on the position.)

NTNX51PB positions are 486/8 MB RAM/540 MB disk. These positions do NOT require an upgrade to support IWS applications.

- 6) The CALA market is only supported for countries which use 110 volt power.

RULES:

- RUL1 1) Provision positions according to traffic requirements. Also provision for sparing if required. See RUL15/16 for upgrades to existing positions.
- RUL2 1) Provision one (1) RTIC card for each DMS gateway and database gateway position. Also provision for sparing if required. The RTIC card is included in "C" and "D" series gateway positions (formerly called "type 1" and "type 2" positions). The RTIC card mounts in slot 1 of "C" series, "D" series, and NTNX51GB positions, and slot 3 of NTNX51FB/PB positions.
- RUL3 1) The Token Ring card is supplied with all positions (or position building blocks) and does NOT need to be ordered by Customer Engineering for each position. This unit may be ordered for sparing if required. The Token Ring card mounts in slot 2 of "C" series, "D" series, and NTNX51GB positions, and slot 4 of NTNX51FB/PB positions.
- RUL4 1) The Digital Telephony Audio card is included in the position building blocks, and does not need to be ordered for each position. Provision for sparing if required. The Audio card mounts in slot 3 of "C" series, "D" series, and NTNX51GB positions, and slot 5 of NTNX51FB/PB positions.
- RUL5 1) Provision one (1) keyboard (English or French) for each position. Also provision for sparing if required. Note: The keyboard included in "C" and "D" series positions requires an upgrade to support IWS applications. See RUL16 and RUL17 for keyboard upgrades.

- 2) Beginning approximately Q4 1994, the Number Row Template is included in the Combined English/French keyboards. For keyboards ordered prior to Q4 1994, provide one P0740628 Number Row Template per position supporting IBM DA IWS.
- RUL6 1) The color monitor is included in the position building block (and "C" and "D" series positions), and does NOT need to be ordered by Customer Engineering for each position. This unit may be ordered for sparing if required. The NTNX51LC monitor is NOT compatible with "C" series, "D" series, or NTNX51GB positions. The NTNX51LD monitor IS compatible with all TOPS MPX positions.
- RUL7 1) Provide one 56K Data Set Unit for each DMS gateway position and database gateway position supplied. Select the DSUs per Customer preference. Also provision for sparing if required.
- RUL8 1) Provide one (1) modem and one (1) cable per combined operator/maintenance position for dial-up maintenance capability. "C" series, "D" series, and NTNX51GB positions require the 25P/25P cable. NTNX51FB/PB positions require the 25P/9P cable.
- RUL9 1) Provide one power strip per position. Provide power strips with twist-lock plugs or straight-blade plugs according to the type of outlets available.
- RUL10 1) Provide one TOPS MPX headset jack assembly building block per position. This building block provides two headset jack assemblies and grounding hardware. The customer is to provide headsets.
- RUL11 1) Provide two sets of position numbering labels per job requirements. The second set will allow the customer to label spares when replacing failed equipment.
- RUL12 1) Provide one P0709177 TOPS MPX MAU Numbering Label Sheet for each TOPS MPX system installation requiring up to four MIS frames. Provide one P0709178 TOPS MPX MAU Numbering Label Sheet for each system requiring five or more MIS frames. Each MIS frame supports up to four token rings.
- RUL13 1) Provide ten (10) blank key caps per keyboard for Bell South only.
- RUL14 1) Provide one keycap removal tool per office.

- RUL15 1) "C" and "D" series MPX positions require upgrades to support IWS applications. Provision upgrade kit(s) according to the starting configuration ("C" or "D" series) and the ending configuration (minimum, additional storage, or high performance). The high performance configuration is STRONGLY RECOMMENDED for some positions and software applications; refer to section 2.2 of the ECM.

STARTING CONFIGURATION

ENDING CONFIGU- RATION		"C" Series	"D" Series
		n/a (*)	2 NTNX51KG
	Minimum (386/8/40)		
	Addl. Storage (386/8/106,212)	2 NTNX51KG 1 NTNX51KH	2 NTNX51KG 1 NTNX51KH
	High Perf (486/8/106)	1 NTZZ99AP	1 NTZZ99AP
	High Perf (486/8/212)	1 NTZZ99AT	1 NTZZ99AT
	High Perf (486/8/540)	1 NTZZ99BT	1 NTZZ99BT

(*) 40 MB disks are not available. "C" series positions may be upgraded to the additional storage or high performance configurations.

- 2) Order one Upgrade Parent Label for each position being upgraded. This label will be applied to the position, and marked to indicate which upgrades have been installed. Upgraded positions are NOT given a new PEC.
- 3) NTNX51KH was 106 MB, and is now 212 MB.

- RUL16 1) Order one Keycap Upgrade Kit for each A0379250 or NTNX51HA keyboard being upgraded to support IWS applications. This kit upgrades the A0379250 or NTNX51HA keyboard to the equivalent of the NTNX51HB. The NTNX51HB Combined English functionality is required for all English IWS applications. (An A0369201 keyboard with the A0379322 keycap kit is

equivalent to an A0379250 keyboard, and can therefore be upgraded with the NTNX51HC to support IWS applications.)

- RUL17 1) Order one Keycap Upgrade Kit (HB to HD) for each Combined English (NTNX51HB) keyboard being converted from English to French. Note that an A0379250 or NTNX51HA keyboard must be upgraded to NTNX51HB (see RUL16) in order to use this upgrade kit.
- RUL18 1) Provide re-legendable key cap(s) if required by the customer.

TOPS MPX IWS RELEASE 02 MCA POSITION EQUIPMENT

PEC CODE: MPX_IWS_R2_MCA

CPC CODE: Not applicable.

| RATING: MD

REPLACES: Not applicable.

| REPLACED BY: MPX_IWS_R2

ABBREVIATION NAME: Not applicable.

ENGINEERING DESCRIPTION: This EMS provisions hardware for TOPS MPX IWS Release 2.0 applications. These applications include Operator Assistance (also called Toll and Assist), Open Information Access, NT DA IWS, and IBM DA IWS. This EMS provisions only the position hardware and MAU numbering labels.

This EMS covers both integrated and modular MCA (PS/2) equipment.

REFERENCE DOCUMENTATION: MSNX51BA 00 19

MARKETS: Applicable markets:

Canada
US
CALA
Europe

ISSUE AUTHOR: NTI: Scott Maggiolo Dept. 3471 (PPK)

MAIN CONTACT: NTI: Scott Maggiolo Dept. 3471 (PPK)

MPX_IWS_R2_MCA EMC8-02-005 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
94 09 21	ECM 695 01	Initial release of ECM for IWS release 2.0. For history of release 1.0, refer to MPX_IWS.
95 02 09	ECM 695 02	Corrections for European markets: Add RTIC and Token Ring cards for Europe, and remove 220V maintenance modem which was only for the Czech job. Add restriction that NT DA with 20 position clusters requires commercial routers.
95 07 11	ECM 695 05	Retire section.

The TOPS MPX IWS Release 02 MCA Position Equipment is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
# TOPS MPX Position NTN51FB	NTZZ36GA					RUL1
# TOPS MPX Position NTN51FB	NTZZ36GB					RUL1
MPX Pos w/ NTN51PB,NTN51BD	NTZZ36GC					RUL1
MPX Pos w/ NTN51PB,NTN51BE	NTZZ36GD					RUL1
FC 6401 RTIC Card	A0369273					RUL2
RTIC Card (Europe)	A0615940					RUL2
69X8138 Token Ring Card	A0602526					RUL3
Token Ring Card (Europe)	A0615939					RUL3
MPX Audio Card	NTN51BD					RUL4
MPX Audio Card (Global)	NTN51BE					RUL4
Audio Card Diag S/W 1.0	P0724371					RUL4
TOPS MPX Keybd, Combined Eng	NTN51HB					RUL5
TOPS MPX Keybd, Combined Fre	NTN51HD					RUL5
TOPS MPX Number Row Template	P0740628					RUL5
# Color Monitor 9518	NTN51LC					RUL6
Color Monitor 9524	NTN51LD					RUL6
# DSU (UDS D56 56K)	64565005					RUL7
DSU (UDS 56K 110/220V)	A0609602					RUL7
# DSU (GDC 56K)	NTN5154					RUL7
DSU (GDC DT500N 56K 110V)	A0602029					RUL7
DSU (GDC DT500N 56K 220V)	A0616226					RUL7
Maint Modem (GDC DC596 110V)	A0351816					RUL8
Cable, 25P Male - 25P Female	A0600741					RUL8
Cable, 25P Male - 9P Female	A0601464					RUL8
Twist-lock Power Strip 110V	A0384297					RUL9
Straight Blade Pwr Str 110V	A0384296					RUL9
Power Strip 220V	A0617131					RUL9
Power Cord (use w/ A0617131)	A0618649					RUL9
TOPS MPX Headset Jack Assy	NTZZ36EA					RUL10
Position Numbering Labels						RUL11
- (Pos. #0000 - #0071)	P0709162					
- (Pos. #0072 - #0143)	P0709163					
- (Pos. #0144 - #0215)	P0709164					
- (Pos. #0216 - #0287)	P0709165					
- (Pos. #0288 - #0359)	P0709166					
- (Pos. #0360 - #0431)	P0709167					
- (Pos. #0432 - #0503)	P0709168					
- (Pos. #0504 - #0575)	P0709169					
- (Pos. #0576 - #0647)	P0709170					
- (Pos. #0648 - #0719)	P0709171					
- (Pos. #0720 - #0791)	P0709172					
- (Pos. #0792 - #0863)	P0709173					
- (Pos. #0864 - #0935)	P0709174					

MPX_IWS_R2_MCA

Retired Equipment

EMC8-02-005

TOPS MPX IWS Release 02 MCA Position Equipment

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EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
- (Pos. #0936 - #1007)	P0709175					
- (Pos. #1008 - #1023)	P0709176					
TOPS MPX MAU Numbering Labels						RUL12
- (MAU #0000 - #0050)	P0709177					
- (MAU #0051 - #0101)	P0709178					
Key Cap (Single Width Blank)	P0714148					RUL13
Keycap Removal Tool	A0379341					RUL14
# 486 Upgr to "C" & "D" Series	NTZZ99AP					RUL15
486 Upgr to "C" & "D" Series	NTZZ99AT					RUL15
4 Meg Memory Kit for 386	NTNX51KG					RUL15
# 80 MB Hard Drive Kit	NTNX51KD					RUL15
106 or 212 MB Hd Dr for 386	NTNX51KH					RUL15
Upgrade Parent Label	P0742570					RUL15
Keycap Upgr Kit (HA to HB)	NTNX51HC					RUL16
Keycap Upgr Kit (HB to HD)	NTNX51HE					RUL17
Application Key	P0725519					RUL18
Cbl Mgmt Brkt Model 57	NTNX5122					RUL19
T.R. Data Cbl, Posn-Junc Box	A0385644					RUL19
Voice Cbl, Posn-Junc Box	NT0R82AB					RUL19
Relegendable Key Cap Assy	P0802113					RUL20

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTNX51LC	MD	NTNX51LD
64565005	MD	A0609602
NTNX5154	MD	A0602029
NTZZ36GA	MD	NTZZ36GB
NTZZ36GB	MD	NTZZ36GC
NTZZ99AP	MD	NTZZ99AT
NTNX51KD	CANCEL	No replacement.

DEV - DEVELOPMENT. These products are in the development phase.
Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if
they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufac-
tured and cannot be ordered.

NOTES:

- 1) Each cluster (of four, sixteen, or twenty positions) requires two DMS gateway positions (for redundant configurations). Non-redundant configurations (one DMS gateway position per cluster) are NOT RECOMMENDED.

Except for NT DA IWS with D1 using commercial routers, each token ring which supports Directory Assistance requires two database gateway positions. If commercial routers are used with NT DA IWS (with D1), database gateway positions are NOT required. OA and OIA do NOT require database gateway positions.

NT DA IWS with cluster size 20 requires commercial routers.

Non-gateway positions are called operator positions. One operator position on each token ring may be equipped with a modem for dial-in maintenance. This position is referred to as a combined operator/maintenance position, or simply as an operator/maintenance position.

- 2) The monitor included with NTNX51CB/CC/CD/DB/DC/DD positions (A0368912) is compatible with IWS applications. The earlier versions of the Audio Card (NTNX51BC/BD) and Token Ring Card (A0368911) are compatible with IWS applications, except that some Release 2.0 features require the NTNX51BE Audio Card. See note 6.
- 3) When upgrading NTNX51CB/CC/CD/DB/DC/DD positions (or the building blocks which include them), remember that these positions/building blocks include the following items which are NOT included in the NTZZ36GA/GB/GC/GD:

RTIC Card (NTNX51CB/CC/DB/DC only)
Keyboard

- 4) Only 106 MB and greater disks are supported with NT-supplied 486 CPU bases. Also, the 386 and 486 processors require different memory modules. Therefore, any systems upgraded to 386/8/40 which are later upgraded to 486, will require new memory and disk at the time the processor is upgraded to 486.
- 5) NTNX51CB/CC/CD positions are referred to as "C" series positions. "C" series positions are 386/2 MB RAM/30 MB disk. These positions require an upgrade to support IWS applications.

NTNX51DB/DC/DD positions are referred to as "D" series positions. "D" series positions are 386/4 MB RAM/40 MB disk. These positions require an upgrade to support IWS applications.

NTNX51FB and NTNX51GB positions are 486/8 MB RAM/106 MB disk. These positions do NOT require an upgrade to support IWS applications. (However, the keyboards with these positions may require a keycap upgrade kit, depending upon the application previously supported on the position.)

NTNX51PB positions are 486/8 MB RAM/540 MB disk. These positions do NOT require an upgrade to support IWS applications.

- 6) TOPS MPX positions must use the NTNX51BE Audio Card in order to support the following IWS 2.0 features. These are the ONLY IWS Release 2.0 features which require the NTNX51BE audio card:

- DTMF Generation
- Volume Adjust
- Mute
- A-Law/Mu-Law Selection

All other IWS Release 2.0 features work with NTNX51BC or NTNX51BD audio cards.

- 7) Integrated MCA, where NT supplies all hardware (including the position and monitor), is available ONLY for U.S., Canadian, and 110 volt CALA markets.

Modular MCA, where NT supplies all hardware EXCEPT the position and monitor, is available for U.S., Canadian, CALA, and European markets.

Unless otherwise indicated, rules apply to both integrated MCA and modular MCA.

U.S. applications require 110 volt equipment.

RULES:

- RUL1 1) For integrated MCA, provision positions according to traffic requirements. Also provision for sparing if required. See RUL15/16 for upgrades to existing positions. Some re-

lease 2.0 features require the NTZZ36GD position, which includes the NTNX51BE audio card. See note 6.

- 2) For modular MCA, the customer will supply the position.
- RUL2 1) Provision one (1) RTIC card for each DMS gateway and database gateway position. Also provision for sparing if required. Select the RTIC card according to market. The RTIC card is included in "C" and "D" series gateway positions (formerly called "type 1" and "type 2" positions). The RTIC card mounts in slot 1 of "C" series, "D" series, and NTNX51GB positions, and slot 3 of NTNX51FB/PB positions.
- RUL3 1) For integrated MCA, the Token Ring card is supplied with all positions (or position building blocks) and does NOT need to be ordered by Customer Engineering for each position. This unit may be ordered for sparing if required. The Token Ring card mounts in slot 2 of "C" series, "D" series, and NTNX51GB positions, and slot 4 of NTNX51FB/PB positions.
- 2) For modular MCA, provision one token ring card per position. Also provide for sparing, if required. Select the token ring card according to market.
- RUL4 1) For integrated MCA, the Digital Telephony Audio card is included in the position building blocks, and does not need to be ordered for each position. Provision for sparing if required, or to upgrade to NTNX51BE to support Release 2.0 features. The Audio card mounts in slot 3 of "C" series, "D" series, and NTNX51GB positions, and slot 5 of NTNX51FB/PB positions. See note 6.
- 2) For modular MCA, provision one Audio card per position. Also provide for sparing, if required. See note 6.
 - 3) Order two (2) audio card diagnostic diskettes per OSC (Operator Service Center).
- RUL5 1) Provision one (1) keyboard (English or French) for each position. Also provision for sparing if required. Note: The keyboard included in "C" and "D" series positions requires an upgrade to support IWS applications. See RUL16 and RUL17 for keyboard upgrades.
- 2) For keyboards ordered beginning approximately Q4 '94, the Number Row Template is included in the Combined Keyboard (English or French).

When upgrading earlier Combined Keyboards, provide one P0740628 Number Row Template per position supporting IBM DA IWS.

- RUL6 1) For integrated MCA, the color monitor is included in the position building block (and "C" and "D" series positions), and does NOT need to be ordered by Customer Engineering for each position. This unit may be ordered for sparing if required. The NTNX51LC monitor is NOT compatible with "C" series, "D" series, or NTNX51GB positions. The NTNX51LD monitor IS compatible with all TOPS MPX positions.
- 2) For modular MCA, the customer will supply the monitor.
- RUL7 1) Provide one 56K Data Set Unit for each DMS gateway position and database gateway position supplied. Select the DSUs per voltage requirement and customer preference. Also provision for sparing if required.
- For European markets, the DSU must be approved by the customer for use in the given country.
- RUL8 1) Provide one (1) modem and one (1) cable per combined operator/maintenance position for dial-up maintenance capability. "C" series, "D" series, and NTNX51GB positions require the 25P/25P cable. NTNX51FB/PB positions require the 25P/9P cable.
- This modem is for U.S., Canada, and 110V CALA markets. Maintenance modems for Europe are country-specific, and must go through the NT qualification process.
- RUL9 1) Provide one power strip per position. Select the type of power strip according to the voltage requirement and the type of outlets available (twist-lock or straight-blade).
- 2) If the A0617131 power strip is required, provide one power cord for each device at the position (position base, monitor, DSU). This will require three power cords per DMS gateway, database gateway, or combined operator/maintenance position, and two power cords per operator position. The country-specific power cord supplied with the position will be used to connect the power strip to the outlet.
- RUL10 1) Provide one TOPS MPX headset jack assembly building block per position. This building block provides two headset jack assemblies and grounding hardware. The customer is to provide headsets.

- RUL11 1) Provide two sets of position numbering labels per job requirements. The second set will allow the customer to label spares when replacing failed equipment.
- RUL12 1) Provide one P0709177 TOPS MPX MAU Numbering Label Sheet for each TOPS MPX system installation requiring up to four MIS frames. Provide one P0709178 TOPS MPX MAU Numbering Label Sheet for each system requiring five or more MIS frames. Each MIS frame supports up to four token rings.
- RUL13 1) Provide ten (10) blank key caps per keyboard for Bell South ONLY. Also, these are ONLY required if the (Bell South) customer is using DA WITHOUT OIA or OA.
- RUL14 1) Provide one keycap removal tool per office.
- RUL15 1) "C" and "D" series MPX positions require upgrades to support IWS applications. Provision upgrade kit(s) according to the starting configuration ("C" or "D" series) and the ending configuration (minimum, additional storage, or high performance). The high performance configuration is STRONGLY RECOMMENDED for some positions and software applications; refer to section 2.2 of the ECM.

STARTING CONFIGURATION

		"C" Series	"D" Series
ENDING CONFIGU- RATION	Minimum (386/8/40)	n/a (*)	2 NTNX51KG
	Addl. Storage (386/8/106,212)	2 NTNX51KG 1 NTNX51KH	2 NTNX51KG 1 NTNX51KH
	High Perf (486/8/106)	1 NTZZ99AP	1 NTZZ99AP
	High Perf (486/8/212)	1 NTZZ99AT	1 NTZZ99AT

(*) 40 MB disks are not available. "C" series positions may be upgraded to the additional storage or high performance configurations.

- 2) Order one Upgrade Parent Label for each position being upgraded. This label will be applied to the position, and marked to indicate which upgrades have been installed. Upgraded positions are NOT given a new PEC.
 - 3) NTNX51KH was 106 MB, and is now 212 MB.
- RUL16 1) Order one Keycap Upgrade Kit for each A0379250 or NTNX51HA keyboard being upgraded to support IWS applications. This kit upgrades the A0379250 or NTNX51HA keyboard to the equivalent of the NTNX51HB. The NTNX51HB Combined English functionality is required for all English IWS applications. (An A0369201 keyboard with the A0379322 keycap kit is equivalent to an A0379250 keyboard, and can therefore be upgraded with the NTNX51HC to support IWS applications.)
- RUL17 1) Order one Keycap Upgrade Kit (HB to HD) for each Combined English (NTNX51HB) keyboard being converted from English to French. Note that an A0379250 or NTNX51HA keyboard must be upgraded to NTNX51HB (see RUL16) in order to use this upgrade kit.
- RUL18 1) Provide one Application Menu Key for each Combined English or Combined French keyboard being upgraded to support Release 2.0. New Combined keyboards (beginning approx. Q4 94) will include the Application Key.
- RUL19 1) For modular MCA, provide one each of the following per position: Cable Management Bracket, T.R. Data Cable, Voice Cable.
- RUL20 1) Provide re-legendable key cap(s) if required by the customer.

TOPS MPX IWS POSITION EQUIPMENT

PEC CODE: MPX_IWS_R2

CPC CODE: Not Applicable

| RATING: MD

REPLACES: MPX_IWS_R2_MCA

| REPLACED BY: IWS_Platform

ABBREVIATION NAME: Not Applicable

ENGINEERING DESCRIPTION: This EMS provisions hardware for TOPS MPX IWS Release 2.93 and higher applications. These applications include Operator Assistance (also called Toll and Assist), Open Information Access, NTDA IWS, and IBM DA IWS. This EMS provisions only the position hardware and MAU numbering labels.

This EMS covers both MCA (PS/2) and ISA (integrated and modular) equipment.

REFERENCE DOCUMENTATION: MSNX51BA 00 27

MARKETS: Applicable markets:

Canada
US
CALA
Europe

ISSUE AUTHOR: NT: Dawn Yost Dept. 3471 (PPK)

MAIN CONTACT: NT: Dawn Yost Dept. 3471 (PPK)

MPX IWS R2 EMC8-02-006 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
95 07 11	ECM 695 05	Introduction of the ISA hardware for TOPS MPX IWS Release 2.0 and higher software applications.
95 10 04	ECM 695 06	MD NTZZ99AT upgrade kit replace with NTZZ99BT upgrade kit. Change maintenance modem. Changes per EC 011-21398.
95 10 27	ECM 695 07	MD NTNX51KH per EC 024-95043.
96 03 04	ECM 695 08	MD NTZZ99BT and NTZZ36GE, replace with NTZZ99CT and NTZZ36GF per 011-21758. Introduce NTNX51KN 1GB hard drive. MD other 5.25 in. disk drive related PECs as WELL.
96 04 03	ECM 695 09	MD NTZZ36GF, reinstate NTZZ36GE, and introduce NTZZ36GG, HP 75MHZ ISA workstation per ECD 011-21842.
96 08 16	ECM 695 11	MD NTNX51LJ and introduce NTNX51LL Color Monitor per EC 011-21910.
97 03 27	ECM 695 15	MD NTNX51LD, NTNX51KN, and NTZZ99CT
97 05 23	ECM 695 16	Incorporated EC 011-22039. Added Belkin MAU Test tool rule.
97 09 19	ECM 695 18	Retired this section. MD'd NTNX51TB, NTNX51LH and NTNX51LL per EC 024-98592. NTNX51TB is part of BB codes NTZZ36GG/GH. This section was also retired per EC 024-98592. The replacement for this section is IWS_Platform.

The TOPS MPX IWS Position Equipment is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
# TOPS MPX Position NTN51FB	NTZZ36GA					RUL1
# TOPS MPX Position NTN51FB	NTZZ36GB					RUL1
# MPX Pos w/ NTN51PB,NTN51BD	NTZZ36GC					RUL1
# MPX Pos w/ NTN51PB,NTN51BE	NTZZ36GD					RUL1
# TOPS MPX ISA Pos. HP XM2	NTZZ36GE					RUL1
# TOPS MPX ISA Pos. HP XM3	NTZZ36GF					RUL1
# TOPS MPX ISA Pos. HP XM4	NTZZ36GG					RUL1
# TOPS IWS ISA Pos. HP XM4/PCI	NTZZ36GH					RUL1
# FC 6401 RTIC Card	A0369273					RUL2
# RTIC Card (Europe)	A0615940					RUL2
ISA RTIC Card	A0619552					RUL2
# 69X8138 Token Ring Card	A0602526					RUL3
# Token Ring Card (Europe)	A0615939					RUL3
ISA Token Ring Card	A0619543					RUL3
# MPX Audio Card	NTNX51BD					RUL4
MPX Audio Card (Global)	NTNX51BE					RUL4
Audio Card Diag S/W 1.0	P0724371					RUL4
ISA Audio Card	NTNX52BC					RUL4
PCI Audio Card	NTNX52CC					RUL4
TOPS MPX Keybd, Combined Eng	NTNX51HB					RUL5
TOPS MPX Keybd, Combined Fre	NTNX51HD					RUL5
TOPS MPX Number Row Template	P0740628					RUL5
# Color Monitor 9518	NTNX51LC					RUL6
# Color Monitor 9524	NTNX51LD					RUL6
# 15" Color Monitor	NTNX51LF					RUL6
# 15" Color Monitor	NTNX51LH					RUL6
# 17" Color Monitor	NTNX51LG					RUL6
# 17" Color Monitor	NTNX51LJ					RUL6
# 17" Color Monitor	NTNX51LL					RUL6
# DSU (UDS D56 56K)	64565005					RUL7
# DSU (UDS 56K 110/220V)	A0609602					RUL7
# DSU (GDC 56K)	NTNX5154					RUL7
DSU (GDC DT500N 56K 110V)	A0602029					RUL7
DSU (GDC DT500N 56K 220V)	A0616226					RUL7
# Maint Modem (GDC DC596 110V)	A0351816					RUL8
GDC (V.FAST) (110V)	A0620530					RUL8
Cable, 25P Male - 25P Female	A0600741					RUL8
Cable, 25P Male - 9P Female	A0601464					RUL8
Twist-lock Power Strip 110V	A0384297					RUL9
Straight Blade Pwr Str 110V	A0384296					RUL9
Power Strip 220V	A0617131					RUL9
Power Cord (use w/ A0617131)	A0618649					RUL9
TOPS MPX Headset Jack Assy	NTZZ36EA					RUL10
PCI Stereo Headset Jack Assy	NTNX5310					RUL10

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
4 to 6-pin Headset Adapter	NTNT5312					RUL10
PCI Mono Headset Jack Assy	NTNT5313					RUL10
Position Numbering Labels						RUL11
- (Pos. #0000 - #0071)	P0709162					
- (Pos. #0072 - #0143)	P0709163					
- (Pos. #0144 - #0215)	P0709164					
- (Pos. #0216 - #0287)	P0709165					
- (Pos. #0288 - #0359)	P0709166					
- (Pos. #0360 - #0431)	P0709167					
- (Pos. #0432 - #0503)	P0709168					
- (Pos. #0504 - #0575)	P0709169					
- (Pos. #0576 - #0647)	P0709170					
- (Pos. #0648 - #0719)	P0709171					
- (Pos. #0720 - #0791)	P0709172					
- (Pos. #0792 - #0863)	P0709173					
- (Pos. #0864 - #0935)	P0709174					
- (Pos. #0936 - #1007)	P0709175					
- (Pos. #1008 - #1023)	P0709176					
- (Pos. #1100 - #1171)	P0869129					
TOPS MPX MAU Numbering Labels						RUL12
- (MAU #0000 - #0050)	P0709177					
- (MAU #0051 - #0101)	P0709178					
Belkin MAU Test Tool	A0379352					
Key Cap (Single Width Blank)	P0714148					RUL13
Keycap Removal Tool	A0379341					RUL14
# 486 Upgr to "C" & "D" Series	NTZZ99AP					RUL15
# 486 Upgr to "C" & "D" Series	NTZZ99AT					RUL15
# 486 Upgr to "C" & "D" Series	NTZZ99BT					RUL15
# 486 Upgrade w/1GB disk	NTZZ99CT					RUL15
4 Meg Memory Kit for 386	NTNX51KG					RUL15
# 80 MB Hard Drive Kit	NTNX51KD					RUL15
# 106 or 212 MB Hd Dr for 386	NTNX51KH					RUL15
# Hard Drive Kit IDE Interface	NTNX51KJ					RUL15
# Hard Drive Kit IDE Interface	NTNX51KM					RUL15
# Hard Drive Kit 1GB	NTNX51KN					RUL15
Upgrade Parent Label	P0742570					RUL15
Keycap Upgr Kit (HA to HB)	NTNX51HC					RUL16
Keycap Upgr Kit (HB to HD)	NTNX51HE					RUL17
Keycap #124 - "Start" key	P0854527					RUL22
Keycap #126 - "POS RLS"	P0854528					RUL22
Key desig. label instruct.	P0844816					RUL21
Application Key	P0725519					RUL18
# Cbl Mgmt Brkt Model 57	NTNX5122					RUL19
Universal Wiring Duct	P0803055					RUL19
T.R. Data Cbl, Posn-Junc Box	A0385644					RUL19
Voice Cbl, Posn-Junc Box	NT0R82AB					RUL19

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Relegendable Key Cap Assy	P0802113					RUL20
Keytop Labels	P0741755					RUL21
Designation Label Instr.	P0844816					RUL21

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTZZ36GG	MD	NTZZ36HA
NTZZ36GH	MD	NTZZ36HB
NTNX51LH	MD	NTNX51LM
NTNX51LL	MD	NTNX51LN
A0609602	MD	None
NTNX51LD	MD	NTNX51LH
NTNX51KN	MD	None
NTZZ99CT	MD	None
NTNX51LC	MD	NTNX51LD
NTNX51LE	MD	NTNX51LD
64565005	MD	A0609602
NTNX5154	MD	A0602029
NTZZ36GA	MD	NTZZ36GB
NTZZ36GB	MD	NTZZ36GC
NTZZ36GC	MD	NTZZ36GD
NTZZ36GD	MD	NTZZ36GE
NTZZ99AP	MD	NTZZ99AT
NTNX51KD	CANCEL	No replacement.
NTZZ99AT	MD	NTZZ99BT
NTNX51KJ	MD	NTNX51KM
NTNX51KH	MD	NTNX51KM
NTNX5122	MD	P0803055
NTZZ99BT	MD	NTZZ99CT
NTZZ36GE	MD	NTZZ36GG
NTZZ36GF	MD	NTZZ36GG
NTNX51LF	MD	NTNX51LH
NTNX51LG	MD	NTNX51LJ
NTNX51KF	MD	NTNX51KP
NTNX51KM	MD	NTNX51KN
NTNX51BD	MD	NTNX51BE
A0369273	MD	A0619552
A0615940	MD	A0619552
A0602526	MD	A0619543
A0615939	MD	A0619543

PEC	RATING	REPLACED BY PEC
A0351816 NTNX51LJ	A&M MD	A0620530 NTNX51LL

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) Each cluster (of four, sixteen, or twenty positions) requires two DMS gateway positions (for redundant configurations). Non-redundant configurations (one DMS gateway position per cluster) are NOT RECOMMENDED.

Except for NTDA IWS with D1 using ASN routers, each token ring which supports Directory Assistance requires two database gateway positions. If ASN routers are used with NTDA IWS (with D1), database gateway positions are NOT required. OA and OIA do NOT require database gateway positions.

NTDA IWS with cluster size 20 requires ASN routers.

Non-gateway positions are called operator positions. One operator position on each token ring may be equipped with a modem for dial-in maintenance. This position is referred to as a combined operator/maintenance position, or simply as an operator/maintenance position.

- 2) The monitor included with NTNX51CB/CC/CD/DB/DC/DD positions (A0368912) is compatible with IWS applications. The new monitors, NTNX51LF and NTNX51LG, are compatible with MCA or ISA hardware. The earlier versions of the Audio Card (NTNX51BC/BD) and Token Ring Card (A0368911) are compatible with IWS applications, except that some Release 2.93 features require the NTNX51BE (MCA) or NTNX52BC (ISA) Audio Card. (See NOTE 6)

- 3) Upgrade kits for NTN51CB/CC/CD/DB/DC/DD are no longer being offered. A new workstation must be provisioned.
- 4) Only 106 MB and greater disks are supported with NT-supplied 486 CPU bases. Also, the 386 and 486 processors require different memory modules. Therefore, any systems upgraded to 386/8/40 which are later upgraded to 486, will require new memory and disk at the time the processor is upgraded to 486.

5)

NTN51FB and NTN51GB positions are 486/8 MB RAM/106 MB disk. These positions do NOT require an upgrade to support IWS applications. (However, the keyboards with these positions may require a keycap upgrade kit, depending upon the application previously supported on the position.)

NTN51PB positions are 486/8 MB RAM/540 MB disk. These positions do NOT require an upgrade to support IWS applications.

- 6) TOPS MPX positions must use the NTN51BE or NTN52BC Audio Card in order to support the following IWS 2.93 features. These are the ONLY IWS Release 2.93 features which require the NTN51BE (MCA) or NTN52BC (ISA) audio card:

- DTMF Generation
- Volume Adjust
- Mute
- A-Law/Mu-Law Selection

All other IWS Release 2.93 features work with NTN51BC or NTN51BD audio cards. The NTN52BC can only be used in ISA hardware.

- 7) Integrated MCA and ISA, where NT supplies all hardware (including the position and monitor), is available ONLY for US, Canadian, and 110V CALA markets.

Modular MCA and ISA, where NT supplies all hardware EXCEPT the position and monitor, is available for US, Canadian, CALA, and European markets.

Unless otherwise indicated, rules apply to both integrated and modular.

US applications require 110V equipment.

- 8) The PCI Audio Card and the ISA RTIC Card should be used in all international installations with direct G.703 audio connections and RS-422 data connections to the E1 channel bank.

RULES:

- RUL1 1) For integrated MCA or ISA, provision positions according to traffic requirements. Provision for sparing if required. See RUL15/16 for upgrades to existing positions. Some release 2.93 features require the NTZZ36GD,GE,GF, or GG position, which includes the NTN51BE (MCA) and NTN52BC (ISA) audio card. (See NOTE 6)
- 2) For modular MCA or ISA, the customer will supply the position but must purchase cards (RTIC, Audio, Token Ring), keyboards, etc. from Nortel. Modular provisioning applies to CALA and Europe. The Integrated approach can only be used for Canada and the US.
- 3) NTZZ36GG should be ordered on all new applications that DO NOT have IBM software.
- 4) The NTZZ36GH is compatible with only IWS Release 7.0 and up.
- RUL2 1) Provision one (1) RTIC card for each DMS gateway and database gateway position. Provision for sparing if required. For ISA positions, provide the A0619552 ISA RTIC Card. For MCA positions, provide the A0369273 FC 6401 RTIC Card for US, Canadian, and CALA markets and the A0619552 RTIC Card (Europe) for European applications. The RTIC card is included in "C" and "D" series gateway positions (formerly "type 1" and "type 2" positions). The RTIC card mounts in slot 1 of "C" series, "D" series, and NTN51GB positions, and slot 3 of NTN51FB/MB/PB/QB positions. The RTIC card can mount in any available slot of the NTN51NB or NTN51RB position.
- RUL3 1) For integrated MCA or ISA, the Token Ring card is supplied with all positions (or position building blocks) and does NOT need to be ordered separately by Customer Engineering for each position. Provision for sparing if required. The Token Ring card mounts in slot 2 of "C" series, "D" series, and NTN51GB positions, and slot 4 of NTN51FB/MB/PB/QB positions. The Token Ring card can mount in any available slot of the NTN51NB or NTN51RB position.

- 2) For modular MCA or ISA, provision one token ring card per position. Provision for sparing if required. For ISA positions, provide the A0619543 ISA Token Ring Card. For MCA positions, provide the A0602526 69X8138 Token Ring Card for US, Canadian, and CALA markets and the A0615939 Token Ring Card (Europe) for European applications.

- RUL4
- 1) For integrated MCA or ISA, the Digital Telephony Audio card (both ISA and PCI) is included in the position building blocks, and does not need to be ordered separately for each position. Provision for sparing if required, or to upgrade to NTNX51BE or NTNX52BC to support Release 2.93 features.

The PCI Audio Card is compatible only with the NTNX51TB position and IWS Release 7.0 software. Eventually, the PCI Audio Card will be compatible with the NTNX51NB (XM2); however, IWS Release 7.0 will still be a requirement,

The Audio card mounts in slot 3 of "C" series, "D" series, and NTNX51GB positions, and slot 5 of NTNX51FB/MB/PB/QB positions. (See NOTE 6) The ISA Audio card can mount in any available slot of the NTNX51NB, NTNX51RB or NTNX51TB position. The PCI audio card mounts in slot 3 of NTNX51TB.

- 2) For modular MCA or ISA, provision one Audio card per position. Provision for sparing if required. (See NOTE 6)
- 3) Order two (2) audio card diagnostic diskettes per OSC (Operator Service Center).

- RUL5
- 1) Provision one (1) keyboard (English or French) for each position. Provision for sparing if required. Note: The keyboard included in "C" and "D" series positions requires an upgrade to support IWS applications. See RUL16 and RUL17 for keyboard upgrades.
 - 2) For keyboards ordered beginning approximately Q4 '94, the Number Row Template is included in the Combined Keyboard (English or French).

When upgrading earlier Combined Keyboards, provide one P0740628 Number Row Template per position supporting IBM DA IWS.

- RUL6
- 1) For integrated MCA, the color monitor is included in the position building block (and "C" and "D" series positions), and does NOT need to be ordered by Customer Engineering for each position. Provision for sparing if required. The NTNX51LC monitor is NOT compatible with "C" series, "D" se-

ries, or NTN51GB positions. The NTN51LD monitor is compatible with all MCA positions. The NTN51LH/LL monitors are compatible with ALL TOPS MPX positions. The NTN51LF/LG/LJ monitors are rated MD status and are no longer available.

- 2) For integrated ISA, provide the NTN51LH 15" Color Monitor or the NTN51LL 17" Color Monitor per customer requirements.
- 3) For modular MCA or ISA, the customer will supply the monitor.

- RUL7 1) Provide one 56K Data Set Unit for each DMS gateway position and database gateway position supplied. Select the DSUs per voltage requirement and customer preference. Provision for sparing if required.

With RS-422 connections from DMS gateway positions, DSUs are not required.

For European markets, the DSU must be approved by the customer for use in the given country.

- RUL8 1) Provide one (1) modem and one (1) cable per combined operator/maintenance position for dial-up maintenance capability. "C" series, "D" series, and NTN51GB require the 25P/25P cable. NTN51FB/PB and ISA positions require the 25P/9P cable.

This modem is for US, Canada, and 110V CALA markets. Maintenance modems for Europe are country-specific, and must go through the NT qualification process.

- RUL9 1) Provide one power strip per position. Select the type of power strip according to the voltage requirement and the type of outlets available (twist-lock or straight-blade).
- 2) If the A0617131 power strip is required, provide one power cord for each device at the position (position base, monitor, DSU). This will require three power cords per DMS gateway, database gateway, or combined operator/maintenance position, and two power cords per operator position. The country-specific power cord supplied with the position will be used to connect the power strip to the outlet.

- RUL10 1) For all positions with the NTN51BD/BE and NTN52BC Audio Card, provide one NTZZ36EA (TOPS MPX headset jack assembly)

per position. It provides two headset jack assemblies and grounding hardware. The customer is to provide headsets.

- 2) For the NTNX52CC Audio Card, provide headset jack assemblies as follows:

For stereo headsets, provide (2) NTNX5310, PCI Stereo Headset Jack Assemblies per workstation.

For mono headsets, provide (2) NTNX5313, PCI Mono Headset Jack Assemblies per workstation.

Provide (2) NTNX5312 PCI Headset Jack Adapters per workstation to connect older headsets (Building block = NTZZ36EA and PEC=NTNX5309) to the PCI Audio Card.

The customer is to provide headsets.

- RUL11 1) Provide two sets of position numbering labels per job requirements. The second set will allow the customer to label spares when replacing failed equipment.

- RUL12 1) Provide one P0709177 TOPS MPX MAU Numbering Label Sheet for each TOPS MPX system installation requiring up to four MIS frames. Provide one P0709178 TOPS MPX MAU Numbering Label Sheet for each system requiring five or more MIS frames. Each MIS frame supports up to four token rings.

Provide (1) Belkin MAU Test Tool per site to properly maintain the IWS token ring(s).

- RUL13 1) Provide ten (10) blank key caps per keyboard for Bell South ONLY. Also, these are ONLY required if the (Bell South) customer is using DA WITHOUT OIA or OA.

- RUL14 1) Provide one keycap removal tool per office.

- RUL15 1) "C" and "D" series MPX positions require upgrades to support IWS applications. Provision upgrade kit(s) according to the starting configuration ("C" or "D" series) and the ending configuration (minimum, additional storage, or high performance). The high performance configuration is STRONGLY RECOMMENDED for some positions and software applications; Refer to section 2.2 of ECM 695.

STARTING CONFIGURATION

"C" Series

"D" Series

ENDING CONFIGU- RATION	Minimum (386/8/40)	n/a (*)		2 NTNX51KG	
		2 NTNX51KG		2 NTNX51KG	
Addl. Storage (386/8/106,212) (HD kit IDE I/F) (HD kit IDE I/F) (1GB HD kit IDE I/F)		1 NTNX51KH (MD)		1 NTNX51KH (MD)	
		1 NTNX51KJ (MD)		1 NTNX51KJ (MD)	
		1 NTNX51KM (MD)		1 NTNX51KM (MD)	
		1 NTNX51KN (MD)		1 NTNX51KN (MD)	
High Perf (486/8/106)		1 NTZZ99AP (MD)		1 NTZZ99AP(MD)	
		1 NTZZ99AT (MD)		1 NTZZ99AT(MD)	
High Perf (486/8/540)		1 NTZZ99BT (MD)		1 NTZZ99BT(MD)	
High Perf (486/8/1GB)		1 NTZZ99CT (MD)		1 NTZZ99CT (MD)	

(*) 40 MB disks are not available. "C" series positions may be upgraded to the additional storage or high performance configurations.

- 2) Order one Upgrade Parent Label for each position being upgraded. This label will be applied to the position, and marked to indicate which upgrades have been installed. Upgraded positions are NOT given a new PEC.
- 3) NTNX51KH was 106 MB, and is now 212 MB.
- 4) NTNX51KM is 540 MB. These items have been Manufacture Discontinued.

5) NTN51KN is 1 GB.

- RUL16 1) Order one Keycap Upgrade Kit for each A0379250 or NTN51HA keyboard being upgraded to support IWS applications. This kit upgrades the A0379250 or NTN51HA keyboard to the equivalent of the NTN51HB. The NTN51HB Combined English functionality is required for all English IWS applications. (An A0369201 keyboard with the A0379322 keycap kit is equivalent to an A0379250 keyboard, and can therefore be upgraded with the NTN51HC to support IWS applications.)
- RUL17 1) Order one Keycap Upgrade Kit (HB to HD) for each Combined English (NTN51HB) keyboard being converted from English to French. Note that an A0379250 or NTN51HA keyboard must be upgraded to NTN51HB (see RUL16) in order to use this upgrade kit.
- RUL18 1) Provide one Application Menu Key for each Combined English or Combined French keyboard being upgraded to support Release 2.93. New Combined keyboards (beginning approx. Q4 94) will include the Application Key.
- RUL19 1) For modular MCA or ISA, provide one each of the following per position: Universal Wiring Duct, T.R. Data Cable, Voice Cable. P0803055 is required for ISA applications.
- RUL20 1) Provide re-legendable key cap(s) if required by the customer.
- RUL21 1) Provide (1) P0741755 keytop label per A0379250 keyboard when upgrading to IWS Release 4.0.
- 2) Provide (1) P0844816 keytop label per A0379250 keyboard when upgrading to IWS Release 6.0. These adhesive labels fit under the clear (re-legendable) keys and are provisioned one per existing A0379250 keyboard per customer request. Provision for spare the P0844816 which is included in the NTN51HA/HB, per customer requirements. The P0741755 has been replaced by P0844816 because of Keycap label changes.
- RUL22 1) Provide (1) P0854528 "Pos Rls" key and (1) P0854527 "Start" key per customer requirements.

97/12/09

EMC9

CELLULAR MOBILE SUBSYSTEMS CHAPTER ALL

CELLULAR MOBILE SUBSYSTEMS CHAPTER ALL

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CELLULAR MOBILE SUBSYSTEMS CHAPTER ALL

EMC9-03-DDU-1 MTXD - DDU ASSEMBLY
EMC9-15-MDSP-2 MDSP (BROWN)

NTZZ38CM
NTZZ38NM

97/12/09

MTXD - DDU ASSEMBLY

PEC CODE: NTZZ38CM

CPC CODE:

RATING: MD

REPLACES:

| REPLACED BY: NT1X55FA

ABBREVIATION NAME: N/A

ENGINEERING DESCRIPTION: This building block provides the necessary components of a Disk Drive Unit (DDU) for the MTXD product. It mounts on the MCEX cabinet building blocks NTZZ38HA and NTZZ38JA.

REFERENCE DOCUMENTATION: SLZZ38CM 00 01 REL 01

MARKETS: Applicable markets:

Wireless

ISSUE AUTHOR: NTI: Deborah Goss Dept. 5849 (RICH)

MAIN CONTACT: NTI: Deborah Goss Dept. 5849 (RICH)

NTZZ38CM EMC9-03-DDU-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
-----	-----	Previous history not available
93 02 14	ECM 492 05	Add building block engineering
95 10 06	ECM 492 26	DKG: MD this building block. The parts herein have been MD by EC 002-16296 which introduces the NT1X55FA IOC SCSI DDU CP.
95 12 01	ECM 492 27	JEL: EC 002-16296 introduces the NT1X55FA product to the MCEX cabinet. EC 018-46611 MD's the building block.

The MTXD - DDU Assembly is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
# Power Converter	NT1X78AA		2	05	2, 26	AP
# DDU Power Cable	NT4X0045		2			AP
# Mercury Disk Hardware Kit	NT4X0038		2			AP
# 5.25" Disk Drive Unit (220M)	NT4X00AG		2	05	10, 18	AP
# MSD DDU Control CP	NT1X55DA		2	19	7, 18	AP
# Designation Label (NT1X78AA)	P0668410		2	05	2, 26	AP
# Designation Label (NT1X55DA)	P0688790		2	19	7, 18	AP

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTZZ38CM	MD	NT1X55FA
NT1X55DA	MD	NT1X55FA
NT1X78AA	MD	NT1X55FA
NT4X0045	MD	NT1X55FA
NT4X0038	MD	NT1X55FA
NT4X00AG	MD	NT1X55FA

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) The DDU at 05:10 must be connected to the NT1X55DA at 19:7. The DDU at 05:18 must be connected to the NT1X55DA at 19:18.
- 2) Only one (1) NTZZ38CM building block can be applied to a MCEX cabinet building block. The MCEX cabinet Building blocks are: NTZZ38HA and NTZZ38JA. 3) The NT1X55FA re-

places all earlier versions of NT1X55__, NT4X00__, and NT1X78AA products.

RULES:

AP 1) When PEC NTZZ38CM is ordered, these items are provided.

MDSP (BROWN)

PEC CODE: NTZZ38NM

CPC CODE:

RATING: STD

| REPLACES: N/A

| REPLACED BY: NTZZ60KA

ABBREVIATION NAME: MDSP

ENGINEERING DESCRIPTION: The Meridian Digital Signal Processor (MDSP) is a Meridian Cabinet which houses 16 DSP units, four per shelf, on four shelves. This frame can be part of the DMS-MTX or MTXD system.

REFERENCE DOCUMENTATION: MSAX82AA 01 02

ISAX82AA 01 01

SLAX82AA 01 01

SLZZ38NM 01 01

MARKETS: Applicable markets:

Wireless

| ISSUE AUTHOR: Jim Large Dept. 5849 (RCH)

| MAIN CONTACT: Jim Large Dept. 5849 (RCH)

| CONTACT: Richard Martin Dept. 5849 (RCH)

NTZZ38NM EMC9-15-MDSP-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 02 14	ECM 492 05	Adds the MDSP cabinet to the MTXD.
93 05 05	ECM 492 07	First issue of Eng Man section.
95 12 01	ECM 492 27	Retire insert.
		Retire building block.

The MDSP (BROWN) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
DSP Shelf	NTAX7601		1	05		AP-01
MDSP Cabinet	NTAX82AA		1			AP
Power Converter	NT2X70AE		1	05	1	AP
Desg. Label NT2X70AE	P0698943		1	05	1	AP
DSP Control Processor	NTAX80AA		1	05	4	AP
Desig Label NTAX80AA	P0737139		1	05	4	AP
Backplane Terminator	NTAX79AA		1	05	8R	AP
DS30A Cable	NTAX8213		8			AP
Frame Supervisory Panel	NTNX26GA		1	60		AP-01
Cooling Unit	NTNX27CA		1	00		AP-01
MDSP - DSPM Shelf Kit	NTZZ38MA			X		RUL1
Filler Panel	NT0X84AA			X		RUL2
DSP Cooling Unit	NTAX77AA		1	65		RUL3
Cooling Unit Filler Panel	P0684448		1	65		RUL3
Power Converter	NT2X70AE			05,X	25	RUL4
Desg. Label NT2X70AE	P0698943			05,X	25	RUL4
Filler Face Plate	NT0X50AE			X	1, 25	RUL4
Desg. Label NT0X50AE	P0591361			X	1, 25	RUL4
MTX - DSP Common CP	NTZZ38RA			X	9, 15	RUL5
Filler Face Plate	NT0X50AA			X	4, 9, 15, 20	RUL5
Desg. Label NT0X50AA	P0578498			X	4, 9, 15, 20	RUL5
DSP Card	NTAX81AA			X	5-8 10-13 16-19 21-24	RUL6
Desg. Label NTAX81AA	P0739914			X	5-8 10-13 16-19 21-24	RUL6
Filler Face Plates	NT0X50AA			05,X	5-8, 10-14 16-19 21-24	RUL7
Desg. Label for NT0X50AA	P0578498			05,X	5-8, 10-14 16-19 21-24	RUL7

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Cabinet Type Label (Brown)	P0738783		2			AP
Door Right - Brown	NTNX2552		2			AP
Door Left - Brown	NTNX2550		2			AP
Door Label Left (Brown)	P0699464		2			AP
Door Label Right (Brown)	P0695230		2			AP
Earthquake Mounting Kit	NTNX2540					RUL8
Earthquake Mounting Kit	NTNX2578					RUL8
Frame Mounting Kit	NTNX2579					RUL8
Frame Mounting Kit	NTNX2580					RUL8
End Panel (right,grey)	NTNX2517					RUL8
End Panel (left,grey)	NTNX2518					RUL8
End Panel (right,brown)	NTNX2531					RUL8
End Panel (left,brown)	NTNX2532					RUL8

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTZZ38NM	MD	NTZZ60KA

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) X = 19, 33, 47.
- 2) Assign the door assemblies to the frame on the hardware specs. Do not ship these items loose.

RULES:

- AP 1) When PEC NTZZ38NM is ordered, these items are provided.
- AP-01 1) These items are always provided with PEC NTAX82AA.
- RUL1 1) Provide one NTZZ38MA MDSP - DSPM Shelf Kit for each shelf position 19,33,47 required. Each shelf supports up to four (4) DSP's.
- RUL2 1) Provide one NT0X84AA filler panel for each shelf (19,33,47) not equiped with a DSPM shelf.
- RUL3 1) Provide one NTAX77AA Top Cooling Unit when providing DSPM shelves at 33 or 47. The cooling unit at the bottom controls shelves 05,19 and the cooling unit at the top controls shelves 33, 47.
- 2) Provide one P0684448 Cooling Unit Filler Panel if DSPM shelves at positions 33 and 47 are not provided.
- RUL4 1) Power converters are always provided in slot 1 for every shelf. One converter in shelf 05 comes with the MDSP cabinet and each shelf kit contains one power converter. Provision one (1) NT2X70AE power converter in slot 25 of each DSPM shelf provisioned. Only provide the NT2X70AE power converters for the DSP's in use.
provide:
for shelf 05, one (1) NT2X70AE in slot 25 for DSP 2-3;
for shelf 19, one (1) NT2X70AE in slot 25 for DSP 6-7;
for shelf 33, one (1) NT2X70AE in slot 25 for DSP 10-11;
for shelf 47, one (1) NT2X70AE in slot 25 for DSP 14-15.
- 2) Provide one P0698943 designation label for each NT2X70AE provisioned.
- 3) Provision one (1) NT0X50AE for slot 1,25 on shelf 05,19,33,47 respective DSP's are not in use.
- 4) Provide one P0591361 designation label for each NT0X50AE ordered.
- RUL5 1) Provision one (1) NTZZ38RA MTX - DSP Common CP for each DSP for DS-30A connections to the ICP.
Each NTZZ38RA interfaces two DS-30 links.
- 2) Provision 1 NT0X50AA for each vacant, unprovisioned NTZZ38RA position.

- RUL6 1) Provide one (1) NTAX81AA circuit packs for every 2 digital DRU's. The DSP modules are defined as follows:

										DSP 4					DSP 5					DSP 6					DSP 7																
SLOT										8					1					1					2					2											
										1	2	3	4	5	6	7	8	R	9	0	1	2	3	R	4	5	6	7	8	9	R	0	1	2	3	4	R	5	6	7	
S H E L F	19	N	T	2	X	7	0	A	E	N	T	A	X	8	0	A	A	N	T	A	X	8	0	A	A	N	T	A	X	8	0	A	A	N	T	A	X	7	0	A	E
										N	T	A	X	8	0	A	A	N	T	A	X	8	0	A	A	N	T	A	X	8	0	A	A	N	T	A	X	7	0	A	E
										N	T	A	X	8	0	A	A	N	T	A	X	8	0	A	A	N	T	A	X	8	0	A	A	N	T	A	X	7	0	A	E
										N	T	A	X	8	0	A	A	N	T	A	X	8	0	A	A	N	T	A	X	8	0	A	A	N	T	A	X	7	0	A	E
										N	T	A	X	8	0	A	A	N	T	A	X	8	0	A	A	N	T	A	X	8	0	A	A	N	T	A	X	7	0	A	E
S H E L F	05	N	T	2	X	7	0	A	E	N	T	A	X	8	0	A	A	N	T	A	X	8	0	A	A	N	T	A	X	8	0	A	A	N	T	A	X	7	0	A	E
										N	T	A	X	8	0	A	A	N	T	A	X	8	0	A	A	N	T	A	X	8	0	A	A	N	T	A	X	7	0	A	E
										N	T	A	X	8	0	A	A	N	T	A	X	8	0	A	A	N	T	A	X	8	0	A	A	N	T	A	X	7	0	A	E
										N	T	A	X	8	0	A	A	N	T	A	X	8	0	A	A	N	T	A	X	8	0	A	A	N	T	A	X	7	0	A	E
										N	T	A	X	8	0	A	A	N	T	A	X	8	0	A	A	N	T	A	X	8	0	A	A	N	T	A	X	7	0	A	E
										DSP 0					DSP 1					DSP 2					DSP 3																

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				DSP 12					DSP 13					DSP 14					DSP 15									
SLOT				8					1 1 1 1 3					1					2					2 2 2				
1 2 3				4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	
S H E L F	47	N	T	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	T	
		2	A	A	A	A	A	A	A	A	A	A	A	A	0	A	A	A	A	A	A	A	A	A	A	A	2	
		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
		7	8	8	8	8	8	7	8	8	8	8	8	7	5	8	8	8	8	8	7	8	8	8	8	7	7	
		0	0	1	1	1	1	9	0	1	1	1	1	9	0	0	1	1	1	1	9	0	1	1	1	1	9	0
		A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
E	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	E		
S H E L F	33	N	T	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
		2	A	A	A	A	A	A	T	A	T	A	A	A	A	0	A	A	A	A	A	A	A	A	A	A	A	2
		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
		7	8	8	8	8	8	7	8	8	8	8	8	7	5	8	8	8	8	8	7	8	8	8	8	8	7	7
		0	0	1	1	1	1	9	0	1	1	1	1	9	0	0	1	1	1	1	9	0	1	1	1	1	9	0
		A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
E	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	E		
				DSP 8					DSP 9					DSP 10					DSP 11									

- 3) Provision one NTNX2579 kit for slab type flooring or one NTNX2580 kit for computer flooring in a non-earthquake zone.
- 4) End panels are only provisioned if a cabinet is the first or last cabinet in an lineup.
If a cabinet is the first in a lineup, provide a left end panel.
If a cabinet is the last in a lineup, provide a right end panel.

The available end panels are as follows:

End Panel (right,grey) : NTNX2517
End Panel (left,grey) : NTNX2518

End Panel (right,brown) : NTNX2531
End Panel (left,brown) : NTNX2532

97/12/09

EMC10

MERIDIAN CABINET EQUIPMENT CHAPTER ALL

MERIDIAN CABINET EQUIPMENT CHAPTER ALL

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MERIDIAN CABINET EQUIPMENT CHAPTER ALL

EMC10-14-MCSS-1	MCSS (GREY)	NTZZ60DA
EMC10-08-MNET-1	MNET (GREY)	NTZZ60GA
EMC10-08-MNET-2	MNET (BROWN)	NTZZ60HA
EMC10-12-MCAM-2	MCAM (BROWN)	NTZZ38VA
EMC10-13-MCGM-1	MCGM (GREY)	NTZZ38NA
EMC10-17-000	MCEX (GREY)	NTZZ38HA
EMC10-21-MCTM-2	MCTM - ISDN (BROWN)	NTZZ38FA

97/12/09

MCSS (GREY)

PEC CODE: NTZZ60DA

CPC CODE: B0238698

RATING: MD

REPLACES: NTZZ38FM

REPLACED BY: N/A

ABBREVIATION NAME: MCSS

ENGINEERING DESCRIPTION: The MCSS frame is used to store spare circuit packs. It can be accessed from front and rear.

REFERENCE DOCUMENTATION: MSNX22
SLZZ60DA

MARKETS: Applicable markets:

Wireless

ISSUE AUTHOR: Jim Large Dept. 5849 (RICH)

MAIN CONTACT: Jim Large Dept. 5849 (RICH)

CONTACT: Richard Martin Dept. 5849 (RICH)

CONTACT: Mike Brunet Dept. W720 (CALG)

NTZZ60DA EMC10-14-MCSS-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 05 05	ECM 492 07	New insert.
94 06 06	ECM 492 12	ECD 018-43061 - Delete P0712628 FSP label.
95 06 06	ECM 492 20	JEL: EC 018-45440 manufacture discontinues to NTZZ60DA.
95 12 21	ECM 492 29	JEL: Replacing the door labels left with the new NORTEL door labels left.

The MCSS (GREY) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Meridian Spare Storage Cab.	NTNX22AA		1			AP
Common Framework	NTNX25AA	FW	1			AP-01
Storage Shelf Assembly	NTNX2201		4			AP-01
Cabinet Type Label (Grey)	P0687619		2			AP
# Door Label Left (Grey)	P0677704		2			AP
Door Label Left (Grey)	P0818848		2			AP
Door Label Right (Grey)	P0699158		2			AP
Door Right - Grey	NTNX2513		2			AP
Door Left - Grey	NTNX2515		2			AP
Anchor Kit (Earthquake Slab)	NTNX2540					RUL1
Anchor Kit (EQ cmptr Floor)	NTNX2578					RUL1
Anchor Kit (Non-EQ Slab)	NTNX2579					RUL1
Anchor Kit (Non-EQ cmp Flr)	NTNX2580					RUL1

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
P0677704	MD	P0818848

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

RULES:

AP 1) When PEC NTZZ60DA is ordered, these items are provided.

- AP-01 1) These items are always provided with PEC NTN22AA.
- 2) NTN2201 provides assembly and equipment required for one circuit pack shelf assembly equipped with capacity for a maximum of fifty-four circuit packs (.875" wide, 27 front and 27 rear) or forty-two circuit packs (1.25" wide, 21 front and 21 rear).
- RUL1 1) Provide one (1) Earthquake Mounting Kit when installing cabinet in ATC zone 6 and 7; NEBS zone 4; and UBC zone 4. Use NTN2540 kit for slab type flooring or NTN2578 for computer flooring.
- 2) Provide one (1) Frame Mounting Kit when installing cabinet in a Non-Earthquake zone. Use NTN2579 kit for slab type flooring or NTN2580 for computer flooring.

MNET (GREY)

PEC CODE: NTZZ60GA

CPC CODE: B0238701

RATING: MD

REPLACES: Not Applicable

| REPLACED BY: None

ABBREVIATION NAME: MNET

ENGINEERING DESCRIPTION: The Meridian Network/Controller (MNET) houses a 64 port Dual Shelf Network (DSN), and a duplicated Common Peripheral Controller (CPC).

REFERENCE DOCUMENTATION: MSNX40AA
SLZZ60GA

MARKETS: Applicable markets:

Wireless

ISSUE AUTHOR: Jim Large Dept. 5849 (RCH)

MAIN CONTACT: Jim Large Dept. 5849 (RCH)

CONTACT: Walter Brown Dept. 5849 (RCH)

CONTACT: Richard Martin Dept. 5849 (RCH)

NTZZ60GA EMC10-08-MNET-1 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 05 05	ECM 492 07	New insert.
94 10 19	ECM 492 16	NTZZ02HM building block replaces NTZZ02HB and updates document author.
95 02 16	ECM 492 18	Corrections per ET 20979.
95 06 06	ECM 492 20	JEL: EC 018-45440 manufacture discontinues to NTZZ60DA.
95 12 01	ECM 492 27	JEL: NTZZ02FA is replaced by NTZZ02FB as a result of NT6X92BB being replaced by NT6X92BC. MD building block per EC 018-46610 as a result of NTMX40AA MD.

The MNET (GREY) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Meridian Net/Cont Module	NTMX40AA	MNET	1			AP
MTXD Designation Label	P0712628		1			AP
Meridian Cabinet Assy	NTNX25AA	FW	1			AP-01
Frame Supv Panel	NTNX26NA	FSP	1	60		AP-01
Network Shelf Assy	NT8X1101	DSN	2	33,47		AP-01
Network Junctor Cable	NT8X1104		4			AP-01
Double Shelf Network	NTZZ07BA		1	33	1	RUL2
Network Clk Interface (SN)	NTZZ07DA		1	33	23	RUL2
MNET to MCTMI conversion kit (SNSE Integration)	NTMX40ZA		1	33,47		RUL5
Com Periph Proc Shelf Assy	NT6X0215	CPC	2	05,19		AP-01
MTX-ICP Common CP (< BCS32+)	NTZZ38WA			05	6	RUL1
MTX-ICP Common CP (>=BCS32+)	NTZZ38XA			05	6	RUL1
MTX-ICP Common CP (XPM PLUS)	NTZZ38YA			05	6	RUL1
10 DS30A LCM Interfaces	NTZZ02KA			05	6,7	RUL1
Time Switch	NT6X44AA		2	05,19	14	RUL1
Desig. Label (NT6X44AA)	P0698316		2	05,19	14	RUL1
Digital Cellular Time Switch	NTAX78AA		2	05,19	14	RUL1
Desig. Label (NTAX78AA)	P0737140		2	05,19	14	RUL1
DS-512 Network Interface	NTZZ02HM		1	05	22	RUL1
16 DS30 Network Interfaces	NTZZ02GA		1	05	22	RUL1
E.F.F. DS1 I/F CP	NT6X50AB			05,19	1-5	RUL3
Desig. Label (NT6X50AB)	P0690976			05,19	1-5	RUL3
Digital Trunk Controller	NTZZ04BA		1	05	6	RUL6
30 Universal Tone Rcvr Ccts	NTZZ02FB		1	05	15	RUL6
Continuity Tone Detector	NT6X70AA		2	05,19	13	RUL6
Jumper Kit for Non-ISDN	NTRX36NI		1	05,19		AP
Cooling Unit	NTNX27CA	CU	1	00		AP-01
Cabinet Type Label (Grey)	P0700925		2			AP
Door Label Left (Grey)	P0677704		2			AP
Door Label Right (Grey)	P0699158		2			AP
Door Right - Grey	NTNX2513		2			AP
Door Left - Grey	NTNX2515		2			AP
Anchor Kit (Earthquake Slab)	NTNX2540					RUL4
Anchor Kit (EQ cmptr Floor)	NTNX2578					RUL4
Anchor Kit (Non-EQ Slab)	NTNX2579					RUL4
Anchor Kit (Non-EQ cmp Flr)	NTNX2580					RUL4

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTZZ02HB	MD	NTZZ02HM

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A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) RE: CPC (Common Peripheral Controller) and NT6X0223 CPC/ISDN shelf assembly:
Common Peripheral Array (CPA) 0 is the lower shelf in the module.
Common Peripheral Array (CPA) 1 is the upper shelf in the module.
- 2) The NTZZ02KA DS30A Interface building block is not provisioned when the CPC is used for DTC applications.

RULES:

- AP 1) When PEC NTZZ60GA is ordered, these items are provided.
- AP-01 1) These items are always provided with PEC NTMX40AA.
- RUL1 1) Provide one (1) MTX - ICP Common CP (XPM PLUS) building block (NTZZ38YA) if provisioning ICP functionality, using XPM PLUS.
The Time Switch CPs (NT6X44AA for analog, NTAX78AA for analog and digital cellular) are provisionable in this building block.

If digital and analog functionality is required, provide:

two (2) NTAX78AA Time Switch CPs and two (2) P0737140 CP designation labels.

If analog only functionality is required, provide:

two (2) NT6X44AA Time Switch CPs and two (2) P0698316 CP designation labels.

- 2) Provide one (1) MTX - ICP Common CP ($\geq$ BCS32+) building block (NTZZ38XA) if provisioning ICP functionality, using the standard XPM processor packfill using BCS32+ or later software.

The Time Switch CPs (NT6X44AA for analog, NTAX78AA for analog and digital cellular) are provisionable in this building block.

If digital and analog functionality is required, provide:

two (2) NTAX78AA Time Switch CPs and two (2) P0737140 CP designation labels.

If analog only functionality is required, provide:

two (2) NT6X44AA Time Switch CPs and two (2) P0698316 CP designation labels.

- 3) Provide one (1) MTX - ICP Common CP ($<$ BCS32+) building block (NTZZ38WA) if provisioning ICP functionality, using the standard XPM processor packfill using software releases lower than BCS32+.

The analog Time Switch CPs (NT6X44AA) are included in this building block.

- 4) Provide one (1) NTZZ02GA building block for DS30 (copper) connection of a DTC/ICP module to the DMS network module.

Provide one (1) NTZZ02HM building block for DS512 (fiber) connection of a DTC/ICP module to the DMS network module. Network interfaces, DS30 (NTZZ02GA), DS512 (NTZZ02HM) are provided in a quantity of one (1) per module.

- 5) Provide up to two (2) NTZZ02KA DS30A Interface building blocks if the ICP is used in digital cellular applications with Meridian Digital Signal Processing cabinets (MDSPs).

The DS30A ports are assigned in the following sequential order: 19,17,18,16,15,13,14,12,11,9,10,8,7,5,6,4,3,1,2,0.

Slot 6 - 19,18,15,14,11,10,7,6,3 & 2

Slot 7 - 17,16,13,12,9,8,,4,1 & 0

RUL2 1) Provide:

one (1) NTZZ07BA Double Shelf Network and
one (1) NTZZ07BA Network Clock Interface (SuperNode)
in order to provision all the circuit packs required for
one (1) 64 port Double Shelf Network (DSN).

- RUL3 1) For DTC/ICP applications, provide a maximum of 10 NT6X50AB DS1 I/F EFF (Extended Frame Format) circuit packs in slots 1-5, both shelves of CPC.
Provide one (1) CP designation label (P0690976) for every NT6X50AB circuit pack provisioned.
- 2) NT6X50AB DS1 EFF I/F circuit packs are assigned in selected slots:

first in the shelf 05, then in shelf 19, from the highest numbered slot (5) toward the lowest number slot (1). When any slot 1-5 of either shelf is unequipped, provide Filler Face Plate NT0X50AA and Designation Label.
- 3) One DS1 I/F or NT6X50AB EFF DS1 I/F circuit pack provides two DS1 ports or spans.
- 4) The DS1 ports/spans are assigned in the following sequential order:
0,1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19.
- RUL4 1) Provide one Earthquake Mounting Kit when installing cabinet in ATC zone 6 and 7; NEBS zone 4; and UBC zone 4. Use NTN2540 kit for slab type flooring or NTN2578 for computer flooring.
- 2) Provide one Frame Mounting Kit when installing cabinet in a Non-Earthquake zone. Use NTN2579 kit for slab type flooring or NTN2580 for computer flooring.
- RUL5 1) Provide one NTMX40ZA MNET to MCTMI conversion kit when an SNSE or ENET are provisioned within the same line-up.
- 2) Provision the NTN33SD Fiber conversion hardware kit at the same time as the NTMX40ZA.(Refer to NTN33CA for fiber kit provisioning needed in conjunction with the upgrade.
- 3) Provision (1) NTN33DR DS30A cable kit if NT6X48AA circuit packs are provisioned for the upper module (SHELF 33,47) of the converted MNET to MCTMI.(Refer to NTN33CA for circuit pack provisioning rules for MCTMI.)
- 4) Provision (1) NTN33DW DS1 cable kit if NT6X50 circuit packs are provisioned for the upper module (SHELF 33,47) of

the converted MNET to MCTMI. (Refer to NTN33CA for circuit pack provisioning rules for MCTMI.)

- RUL6
- 1) Provide one (1) NTZZ04BA Digital Trunk Controller and one (1) NTZZ02FB 30 Universal Tone Rcvr Ccts building blocks if provisioning a domestic DTC.
 - 2) Provide two (2) NT6X70AA Continuity Tone Detector CPS if the module requires CCS signalling and continuity checking.

MNET (BROWN)

PEC CODE: NTZZ60HA

CPC CODE: B0238702

RATING: MD

REPLACES: Not Applicable

| REPLACED BY: None

ABBREVIATION NAME: MNET

ENGINEERING DESCRIPTION: The Meridian Network/Controller (MNET) houses a 64 port Dual Shelf Network (DSN), and a duplicated Common Peripheral Controller (CPC).

REFERENCE DOCUMENTATION: MSNX40AA
SLZZ60HA

MARKETS: Applicable markets:

Wireless

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NTZZ60HA EMC10-08-MNET-2 CHANGE HISTORY

Engineering Manual Section Change History		
DATE	DOCUMENT	REASON
93 05 05	ECM 492 07	New insert.
94 10 19	ECM 492 16	NTZZ02HM building block replaces NTZZ02HB and updates document author.
95 02 16	ECM 492 18	Corrections per ET 20979.
95 06 06	ECM 492 20	JEL: EC 018-45440 manufacture discontinues to NTZZ60DA.
95 12 01	ECM 492 27	JEL: NTZZ02FA is replaced by NTZZ02FB as a result of NT6X92BB being replaced by NT6X92BC. MD building block per EC 018-46610 as a result of NTMX40AA MD.

The MNET (BROWN) is comprised of the following:

EQUIPMENT	PEC	ABBR	QTY	SHF POS	CP POS	RULE
Meridian Net/Cont Module	NTMX40AA	MNET	1			AP
MTXD Designation Label	P0712628		1			AP
Meridian Cabinet Assy	NTNX25AA	FW	1			AP-01
Frame Supv Panel	NTNX26NA	FSP	1	60		AP-01
Network Shelf Assy	NT8X1101	DSN	2	33,47		AP-01
Network Junctor Cable	NT8X1104		4			AP-01
Double Shelf Network	NTZZ07BA		1	33	1	RUL2
Network Clk Interface (SN)	NTZZ07DA		1	33	23	RUL2
MNET to MCTMI conversion kit (SNSE Integration)	NTMX40ZA		1	33,47		RUL5
Com Periph Proc Shelf Assy	NT6X0215	CPC	2	05,19		AP-01
MTX-ICP Common CP (< BCS32+)	NTZZ38WA			05	6	RUL1
MTX-ICP Common CP (>=BCS32+)	NTZZ38XA			05	6	RUL1
MTX-ICP Common CP (XPM PLUS)	NTZZ38YA			05	6	RUL1
10 DS30A LCM Interfaces	NTZZ02KA			05	6,7	RUL1
Time Switch	NT6X44AA		2	05,19	14	RUL1
Desig. Label (NT6X44AA)	P0698316		2	05,19	14	RUL1
Digital Cellular Time Switch	NTAX78AA		2	05,19	14	RUL1
Desig. Label (NTAX78AA)	P0737140		2	05,19	14	RUL1
DS-512 Network Interface	NTZZ02HM		1	05	22	RUL1
16 DS30 Network Interfaces	NTZZ02GA		1	05	22	RUL1
E.F.F. DS1 I/F CP	NT6X50AB			05,19	1-5	RUL3
Desig. Label (NT6X50AB)	P0690976			05,19	1-5	RUL3
Digital Trunk Controller	NTZZ04BA		1	05	6	RUL6
30 Universal Tone Rcvr Ccts	NTZZ02FB		1	05	15	RUL6
Continuity Tone Detector	NT6X70AA		2	05,19	13	RUL6
Jumper Kit for Non-ISDN	NTRX36NI		1	05,19		AP
Cooling Unit	NTNX27CA	CU	1	00		AP-01
Cabinet Type Label (Brown)	P0700926		2			AP
Door Right - Brown	NTNX2552		2			AP
Door Left - Brown	NTNX2550		2			AP
Door Label Left (Brown)	P0699464		2			AP
Door Label Right (Brown)	P0695230		2			AP
Anchor Kit (Earthquake Slab)	NTNX2540					RUL4
Anchor Kit (EQ cmptr Floor)	NTNX2578					RUL4
Anchor Kit (Non-EQ Slab)	NTNX2579					RUL4
Anchor Kit (Non-EQ cmp Flr)	NTNX2580					RUL4

EQUIPMENT FLAGGED '#':

PEC	RATING	REPLACED BY PEC
NTZZ02HB	MD	NTZZ02HM

DEV - DEVELOPMENT. These products are in the development phase. Please contact NPPM prior to ordering.

A&M - ADDITIONS & MAINTENANCE. These products can only be ordered if they are already in use in that office.

MD - MANUFACTURED DISCONTINUED. These products are no longer manufactured and cannot be ordered.

NOTES:

- 1) RE: CPC (Common Peripheral Controller) and NT6X0223 CPC/ISDN shelf assembly:
Common Peripheral Array (CPA) 0 is the lower shelf in the module.
Common Peripheral Array (CPA) 1 is the upper shelf in the module.
- 2) The NTZZ02KA DS30A Interface building block is not provisioned when the CPC is used for DTC applications.

RULES:

- AP 1) When PEC NTZZ60HA is ordered, these items are provided.
- AP-01 1) These items are always provided with PEC NTMX40AA.
- RUL1 1) Provide one (1) MTX - ICP Common CP (XPM PLUS) building block (NTZZ38YA) if provisioning ICP functionality, using XPM PLUS.
The Time Switch CPs (NT6X44AA for analog, NTAX78AA for analog and digital cellular) are provisionable in this building block.
- If digital and analog functionality is required, provide:
two (2) NTAX78AA Time Switch CPs and two (2) P0737140 CP designation labels.

If analog only functionality is required, provide:
two (2) NT6X44AA Time Switch CPs and two (2) P0698316 CP designation labels.

- 2) Provide one (1) MTX - ICP Common CP ($\geq$ BCS32+) building block (NTZZ38XA) if provisioning ICP functionality, using the standard XPM processor packfill using BCS32+ or later software.
The Time Switch CPs (NT6X44AA for analog, NTAX78AA for analog and digital cellular) are provisionable in this building block.

If digital and analog functionality is required, provide:
two (2) NTAX78AA Time Switch CPs and two (2) P0737140 CP designation labels.

If analog only functionality is required, provide:
two (2) NT6X44AA Time Switch CPs and two (2) P0698316 CP designation labels.

- 3) Provide one (1) MTX - ICP Common CP ($<$ BCS32+) building block (NTZZ38WA) if provisioning ICP functionality, using the standard XPM processor packfill using software releases lower than BCS32+.
The analog Time Switch CPs (NT6X44AA) are included in this building block.
- 4) Provide one (1) NTZZ02GA building block for DS30 (copper) connection of a DTC/ICP module to the DMS network module.

Provide one (1) NTZZ02HM building block for DS512 (fiber) connection of a DTC/ICP module to the DMS network module.
Network interfaces, DS30 (NTZZ02GA), DS512 (NTZZ02HM) are provided in a quantity of one (1) per module.

- 5) Provide up to two (2) NTZZ02KA DS30A Interface building blocks if the ICP is used in digital cellular applications with Meridian Digital Signal Processing cabinets (MDSPs).

The DS30A ports are assigned in the following sequential order: 19,17,18,16,15,13,14,12,11,9,10,8,7,5,6,4,3,1,2,0.

Slot 6 - 19,18,15,14,11,10,7,6,3 & 2
Slot 7 - 17,16,13,12,9,8,,4,1 & 0

- RUL2 1) Provide:
one (1) NTZZ07BA Double Shelf Network and
one (1) NTZZ07BA Network Clock Interface (SuperNode)

in order to provision all the circuit packs required for one (1) 64 port Double Shelf Network (DSN).

- RUL3 1) For DTC/ICP applications, provide a maximum of 10 NT6X50AB DS1 I/F EFF (Extended Frame Format) circuit packs in slots 1-5, both shelves of CPC. Provide one (1) CP designation label (P0690976) for every NT6X50AB circuit pack provisioned.
- 2) NT6X50AB DS1 EFF I/F circuit packs are assigned in selected slots:
- first in the shelf 05, then in shelf 19, from the highest numbered slot (5) toward the lowest number slot (1). When any slot 1-5 of either shelf is unequipped, provide Filler Face Plate NT0X50AA and Designation Label.
- 3) One DS1 I/F or NT6X50AB EFF DS1 I/F circuit pack provides two DS1 ports or spans.
- 4) The DS1 ports/spans are assigned in the following sequential order:
0,1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19.
- RUL4 1) Provide one Earthquake Mounting Kit when installing cabinet in ATC zone 6 and 7; NEBS zone 4; and UBC zone 4. Use NTNX2540 kit for slab type flooring or NTNX2578 for computer flooring.
- 2) Provide one Frame Mounting Kit when installing cabinet in a Non-Earthquake zone. Use NTNX2579 kit for slab type flooring or NTNX2580 for computer flooring.
- RUL5 1) Provide one NTMX40ZA MNET to MCTMI conversion kit when an SNSE or ENET are provisioned within the same line-up.
- 2) Provision the NTNX33SD Fiber conversion hardware kit at the same time as the NTMX40ZA.(Refer to NTNX33CA for fiber kit provisioning needed in conjunction with the upgrade.
- 3) Provision (1) NTNX33DR DS30A cable kit if NT6X48AA circuit packs are provisioned for the upper module (SHELF 33,47) of the converted MNET to MCTMI.(Refer to NTNX33CA for circuit pack provisioning rules for MCTMI.)
- 4) Provision (1) NTNX33DW DS1 cable kit if NT6X50 circuit packs are provisioned for the upper module (SHELF 33,47) of the converted MNET to MCTMI. (Refer to NTNX33CA for circuit pack provisioning rules for MCTMI.)

- RUL6
- 1) Provide one (1) NTZZ04BA Digital Trunk Controller and one (1) NTZZ02FB 30 Universal Tone Rcvr Ccts building blocks if provisioning a domestic DTC.
 - 2) Provide two (2) NT6X70AA Continuity Tone Detector CPs if the module requires CCS signalling and continuity checking.

Release 05.03
December 1997

DMS-100 Family
North American DMS-100
ALL PRODUCTS COMPUTING-MODULE LOADS Vol 14 of 15

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